

Technical assistance for assessing options to establish an EU-wide green label with a view to promote the use of renewable energy coming from new installations

Final report
under framework contract
MOVE/ENER/SRD/498-2016 Lot 3

EUROPEAN COMMISSION

Directorate-General for Energy
Directorate C — Green Transition and Energy System Integration
Unit C2 — Decarbonisation and Sustainability of Energy Sources

Contact: Henrik Dam

E-mail: ENER-UNIT-C2 @ec.europa.eu

*European Commission
B-1049 Brussels*

Manuscript completed in June 2021

1st edition

LEGAL NOTICE

This document has been prepared for the European Commission however it reflects the views only of the authors, and the European Commission is not liable for any consequence stemming from the reuse of this publication. More information on the European Union is available on the Internet (<http://www.europa.eu>).

PDF	ISBN 978-92-76-39080-0	doi: 10.2833/266012	Catalogue number MJ-02-21-796-EN-N
-----	---------------------------	------------------------	---------------------------------------

Luxembourg: Publications Office of the European Union, 2021

© European Union, 2021



The reuse policy of European Commission documents is implemented by the Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39). Except otherwise noted, the reuse of this document is authorised under a Creative Commons Attribution 4.0 International (CC-BY 4.0) licence (<https://creativecommons.org/licenses/by/4.0/>). This means that reuse is allowed provided appropriate credit is given and any changes are indicated.

For any use or reproduction of elements that are not owned by the European Union, permission may need to be sought directly from the respective rightholders.



Rotterdam, 2 February 2021

Client: European Commission - DG ENER C.1

Under framework contract MOVE/ENER/SRD/2016-498 Lot 3

*Technical assistance for assessing options to establish an EU-wide green label
with a view to promote the use of renewable energy coming from new
installations*

Prepared by:

Jessica Yearwood (Trinomics)
Lisa Korteweg (Trinomics)
Tycho Smit (Trinomics)
Koen Rademaekers (Trinomics)
Dominik Seebach (Öko-Institut)
Andreas Hermann (Öko-Institut)
Juliane Dieroff (Öko-Institut)
Teodora Stojanovic (Öko-Institut)
Marion Wingenbach (Öko-Institut)
Christof Timpe (Öko-Institut)
Veit Bürger (Öko-Institut)
Klaus Hennenberg (Öko-Institut)
Matthias Altmann (LBST)
Martin Zerta (LBST)
Patrick Schmidt (LBST)
Tabea Gleiter (LBST)

In association with:



CONTENTS

<u>Glossary</u>	i
<u>Acronyms and abbreviations</u>	iii
<u>Executive summary</u>	v
<u>1 Introduction</u>	1
<u>1.1 Objective of this report</u>	1
<u>1.2 Background information</u>	1
<u>1.3 Structure of this report</u>	2
<u>2 Methodology</u>	3
<u>3 Mapping of existing green energy labels</u>	5
<u>4 Analysis of the impacts of the existing labels</u>	15
<u>4.1 Improved consumer information and awareness</u>	15
<u>4.2 Functioning of the energy market and the supplier switching</u>	18
<u>4.3 Use of the labels in EU public procurement</u>	19
<u>4.4 Promotion of specific sources of energy</u>	21
<u>4.5 Promoting consumers use of renewable energy from new installations & triggering installation of additional renewable generation capacities</u>	21
<u>5 Suitability of the EU Ecolabel to be the Union wide green RES label</u>	27
<u>5.1 Scope of the EU Ecolabel</u>	27
<u>5.2 Relevant Product Group for an EU Ecolabel for RES</u>	27
<u>5.2.1 Similar purpose/use</u>	28
<u>5.2.2 Similar consumer perception</u>	29
<u>5.3 EUEcolabel with different levels of ambition(basic standard, premium standard)</u>	29
<u>5.4 Material Requirements for Award Criteria according to EU Ecolabel Regulation</u> ..	30
<u>5.5 The EU Ecolabel governance requirements</u>	32
<u>5.6 EU Ecolabel requirements for RES and their compliance with main principles in the Public Procurement Directives</u>	35
<u>5.6.1 Award Criteria and discrimination between tenderers</u>	35
<u>5.6.2 "Link to the subject matter"</u>	36
<u>5.6.3 Labels as means of proof in public procurement</u>	38
<u>5.7 Preliminary Conclusion</u>	38
<u>6 Options for establishing a Union wide green energy label</u>	41
<u>6.1 Minimum criteria for the development of label options</u>	41

6.1.1	<u>Key criteria and requirements for the governance of labels</u>	41
6.1.2	<u>Major design options</u>	42
6.2	<u>Principles for the development of options for award criteria</u>	42
6.3	<u>General analysis of individual award criteria characteristics</u>	44
6.3.1	<u>Overview and introduction to the analysis approach</u>	44
6.3.2	<u>Criteria-specific conclusions</u>	45
6.4	<u>Proposed options</u>	48
6.4.1	<u>Option 1: New EU label</u>	48
6.4.2	<u>Option 2: EU Ecolabel</u>	51
6.4.3	<u>Option 3: Existing labels</u>	52
6.4.4	<u>All options</u>	53
6.4.5	<u>Overview of options: governance and award criteria</u>	54
7	<u>Impact assessment</u>	55
7.1	<u>Problem definition and objective setting</u>	55
7.2	<u>Green label options</u>	58
7.2.1	<u>Alternatives</u>	58
7.2.2	<u>Baseline scenario</u>	60
7.3	<u>Assessment of impacts</u>	62
7.3.1	<u>Relevance</u>	63
7.3.2	<u>Coherence</u>	63
7.3.3	<u>Effectiveness</u>	66
7.3.4	<u>Efficiency</u>	79
7.3.5	<u>EU added value</u>	81
7.4	<u>Comparison of green label options</u>	83
8	<u>Conclusions and recommendations</u>	87
	<u>References</u>	90
	<u>Annex A - Additionality through the Renewable Energy Financing Mechanism</u>	94

Glossary

Additionality	<i>In the context of green energy labelling additionality is the key concept in order to ensure that the voluntary green energy market contributes to increasing sustainability in the energy sector. Additionality is given when a green energy product leads to an extra environmental benefit compared to a baseline defined by the development in the energy market which would have occurred under the current market conditions and the existing legal framework. For example, additionality can be reached by initiating the installation of new renewable energy plants or by improving the environmental performance of existing plants.¹</i>
Eligibility	<i>“In the context of green electricity labelling eligibility criteria define which energy sources and technologies are in principle eligible, which ecological standards eligible power plants have to comply with and which technologies are entirely excluded in the scope of the scheme”.²</i>
Fund Model	<i>Under contribution based green energy schemes, a green supplier charges a premium on top of the supply of electricity which might either come from conventional or from renewable sources. The premiums build a fund which is invested in expanding eligible green energy capacity or in other projects and activities which are considered eligible.</i>
Green labels	<i>Green energy labels are labels that define minimum environmental standards for energy products such as electricity, gas and heat. Moreover, labelling shall be understood as a third-party certification of selected attributes of a specific energy supplier product (e.g. electricity products), providing easy to understand information.</i>
Guarantees of Origin	<i>An electronic document which has the sole function of providing evidence to a final customer that a given share or quantity of energy was produced from renewable sources.³</i>
Green Public Procurement (GPP)	<i>A process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life-cycle when compared to goods, services and works with the same primary function that would otherwise be procured.⁴</i>
Labelling	<i>According to the Request for Service by the European Commission, “labelling” shall be understood as a third-party certification of selected attributes or qualities of a specific energy supplier product and which provides an easy to understand information tag.”</i>
Renewable power purchase agreements (PPAs)	<i>Contracts under which a legal or natural person agrees to purchase renewable electricity directly from an energy generator. This option includes both physical and virtual PPAs.⁵</i>
Unbundled guarantees of origin	<i>Purchasing GOs (from e.g. a RE generator or a third-party broker) that certify the renewable attributes of electricity without acquiring the electricity for which the GOs were issued.</i>

¹ Öko-Institut et al. (2007). "Clean Energy Network for Europe (CLEAN-E)"

² Willstedt, H. & Bürger, V. (2006). Overview of existing green power labelling schemes: WP 1 report from the CLEAN-E project. A report prepared as part of the EIE project "Clean Energy Network for Europe (CLEAN-E)"

³ According to Art. 3 of Directive (EU) 2018/2001 on the promotion of the use of energy from renewable sources (recast)

⁴ COM (2008) 400 at page 4.

⁵ European Commission (2019). Competitiveness of corporate sourcing of renewable energy; Part 2 of the Study on the competitiveness of the renewable energy sector; Final report; ENERG/C2/2016-501; Brussels, 28 June 2019

Supply Model	<i>In the supply model, green energy customers are supplied with energy generated by environmentally sound facilities. The supplier needs to prove periodically that he has acquired property rights on environmental attributes associated to eligible green energy generation which correspond to the amount of energy supplied to green customers. The determining factor in this regard is the contractual supply of electricity from eligible sources. Environmental benefits accrue from the characteristics of the supplied energy.</i>
--------------	--

Acronyms and abbreviations

Art.	Article
BCM	Billion Cubic Meter
BEUC	Bureau Européen des Unions de Consommateurs
CEER	Council of European Energy Retailers
CER	Certified emission reductions
ct	cent
CO ₂	Carbon dioxide
CSR	Corporate social responsibility
DG ENER	Directorate-General for Energy
EC	European Commission
ECJ	European Court of Justice
EEA	European Economic Area
EMAS	Eco-management & Audit Scheme
ETS	Emissions Trading System
EU	European Union
EUEB	European Union Ecolabelling Board
FSC	Forest Stewardship Council
GHG	Greenhouse gas
GMO	Genetically modified organism
GO	Guarantee(s) of origin
GPP	Green Public Procurement
H ₂	Hydrogen
H&C	Heating and Cooling
IA	Impact Assessment
ICLEI	Local Governments for Sustainability
IEA	International Energy Agency
IRENA	International Renewable Energy Agency
ISO	International Standards Organisation
kW	Kilowatt
kWh	Kilowatt-hour
LCOE	Levelised Cost of Electricity
MS	Member State

MWh	Megawatt-hour (1000 kWh)
NCB	National Competent Body
NECP	National energy and climate plan
NGO	Non-governmental organisation
PPA	Power purchase agreement
PPP	Public Procurement Principles
PV	Photovoltaic
RED II	Recast Renewable Energy Directive ⁶
RES	Renewable energy sources
RES-E	Electricity produced from renewable energy sources
T	Ton(nes)
TWh	Terawatt-hour
USD	United States Dollar
VER	Verified emissions reductions

⁶ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast), OJ L 328, 21.12.2018, p. 82-209.

Executive summary

This report defines and assesses options to establish an EU-wide green label with a view to promote the use of renewable energy coming from new installations as required by Art. 19 (13) of the Renewable Energy Directive recast (EU) 2018/2001 (RED II).⁷ The RED II highlights the role of consumers in transforming the energy system by purchasing green energy products. In order to do this, consumers must be provided with the necessary knowledge about green energy products and their features. Green energy labels are one of the tools that can provide easy to understand information to consumers regarding the sustainability of their energy and the contribution that their energy purchase makes to the transition to a zero-emission energy system.

Existing green energy labels

Currently, there is a broad range of energy labels in Europe though they all have a minor market share, well below 1% (with two exceptions), of total energy consumption. The identified and analysed labels mainly address, as expected, electricity. However, there are also a significant number of gas labels that have recently emerged while the number of heat labels identified is very limited, and only one label was identified which explicitly addresses cooling within its criteria. The labels that are analysed often have either a strict regional/national restriction or have a clear focus on where they are applied. The labels analysed apply a broad range of criteria, including a variety of models to ensure additionality, including fund models, “new” or “additional” plant requirements for the supply, and other approaches.

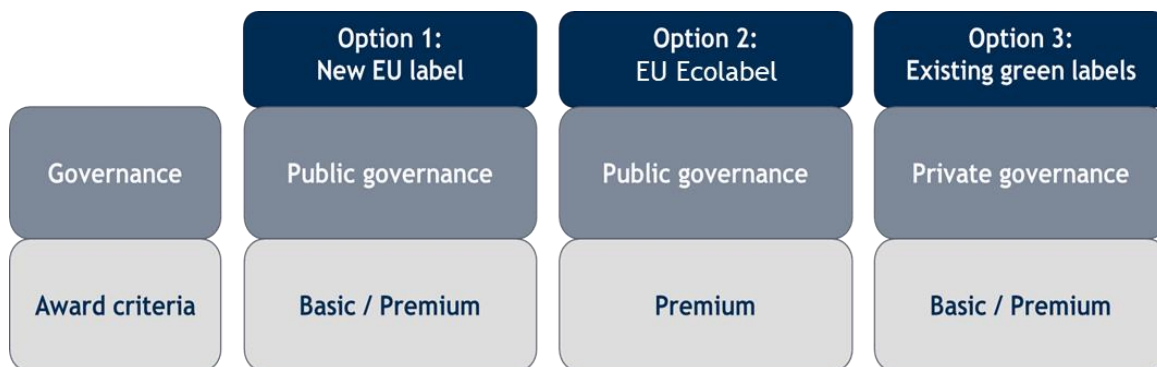
Overall, existing labels were found to improve consumer information and awareness and may complement information given in the GOs. However, a multitude of labels may cause confusion among consumers and energy producers. There is some evidence that labels increase the consumers’ demand for clean (labelled) energy, though their impact on supplier switching seems to have been very limited. Labels can also be a tool to improve Green Public Procurement of energy by making it easier for procurers to include environmental criteria, such as additionality criteria. However, as many public authorities are not even aware of the potential role of labels and their criteria in the procurement process, the impact has been low so far. No evidence was found that green energy labels promote additional renewable energy consumption from new installations. Further, existing labels do not significantly affect the installation of additional renewable generation capacities. The direct investments from the fund models are very limited (due to limited market share); and while additionality criteria often focus on targeting renewable energy generated by new capacities, in many cases these projects would have been built regardless. However, labels do stimulate other environmental benefits.

Options for establishing an EU wide green energy label

Based on this analysis, along with an assessment of the suitability of the EU ecolabel as an EU-wide green energy label, three concrete options to establish an EU-wide green energy label including governance and award criteria are proposed here (see Figure below).

⁷ This article states that “The Commission shall adopt a report assessing options to establish a Union-wide green label with a view to promoting the use of renewable energy coming from new installations. Suppliers shall use the information contained in GOs to demonstrate compliance with the requirements of such a label.”

Figure 0-1 Proposed governance options and award criteria for an EU wide green energy labelling



- **Option 1: New EU label.** A new EU-wide green energy label would be established through a new Regulation allowing for new features (graded label; differences for electricity, heat and gas products) compared to the existing EU Ecolabel. With the new Regulation an official voluntary graded label would be introduced at European level. The new Regulation would use the same governance as the existing EU Ecolabel Regulation (as in option 2). The main difference between this option 1 and option 2 is the establishment of a graded label with a “basic” and a “premium” label, and the possibility to enlarge the options for further elements in the award criteria that are excluded in the current version of the EU Ecolabel Regulation. Option 1 requires additional marketing efforts for the introduction, perception and acceptance of the new label all over Europe;
- **Option 2: EU Ecolabel.** With option 2, the existing EU Ecolabel will be applied as the official EU-wide green energy label. No immediate action is required to change the governance structure, since the EU Ecolabel Regulation does not have to be adjusted or modified. A major effort would nonetheless be required for defining the award criteria, and for introducing the label to the market. Once introduced, the EU Ecolabel for green energy does not exclude the existence and market presence of existing labels, or the emergence of new private labels, which may be expected to be the case in some Member States;
- **Option 3: Existing green labels.** With option 3, the EU will not establish or operate an official EU label for green energy directly, but it recognises private labels (or it “labels existing labels”) that meet the minimum governance requirements and the basic and/or advanced award criteria. Further research would be needed to determine the appropriate legal instrument for this option. The proposed instrument should, in any case, be in line with the current EU initiatives of empowering consumers⁸ and green claims⁹. In addition to officially recognising those existing labels, EC support should be provided to cover marketing support for the EU-wide recognition of the private labels (*“active” marketing instrument*), and allow the recognised private labels to state and advertise for themselves that they are officially supporting the European energy strategy and are in-line with EU requirements and targets (*“passive” marketing instrument; no active role of the EC*).





The following figure provides an overview of award criteria options for a Union-wide label for electricity, heating & cooling and for gas.

⁸ See for more information the Inception Impact Assessment - [Consumer policy - strengthening the role of consumers in the green transition](#)

⁹ See for more information: https://ec.europa.eu/environment/eussd/smgp/initiative_on_green_claims.htm

Figure 0-2 Overview of criteria options for a Union-wide label for electricity, heating & cooling and gas

	Electricity	Heating/Cooling	Gas
Common	Common criteria		
Supplier	Premium: Exclusion of operators of coal / nuclear)	Premium: Exclusion of operators of coal / nuclear / oil)	
Eligibility and Sustainability	Biomass sustainability criteria	Biomass sustainability criteria	basic & premium: Biomass sust. / premium (fund)
	Hydro premium (fund)	Hydro premium (fund)	H ₂ : elec. = elec. sust. criteria; GHG threshold;
Additionality	New unsupport. plants basic / premium	New unsupport. plants basic / premium	H ₂ : elec. = elec. crit. (new unsupp /fund/target) basic / premium
	Fund basic / prem. EU target	Fund basic / prem. EU target	Biomass: fund

	Criteria also applicable for Ecolabel and GPP		Criteria not applicable for Ecolabel, but applicable for GPP
	Criteria possibly not applicable for Ecolabel and GPP		Future option

Comparison of the options

The impacts of the three options were assessed and the options were compared against the baseline (see Table 0-1 below). In terms of **relevance**, the three label options are regarded as relevant as each option contributes to consumer information and - to a limited extent - the consumption of energy coming from new installations. In terms of **coherence**, the EU Ecolabel (option 2) is most coherent with the existing policy framework as it uses without changes an existing EU tool.

Regarding **effectiveness**, general uptake level of the three label options is expected to remain low given the voluntary nature of the label tool (under 2% of the final energy consumption). Regarding the deployment of new/additional renewable energy, it is only possible to quantify the impact of the label by assuming that it would use a fund model. In that case, the overall impact would still remain limited due to the low expected level of label uptake. The level of contribution to the fund will vary depending on the level of contribution to the model and support levels provided, as well as whether the basic or premium standard is applied with higher impacts for the premium standard. The fund model could lead to additional renewable energy generation capacity, new jobs and avoided greenhouse gas emissions. The supply model was excluded in the analysis as no impact has been identified for existing labels and there are too many uncertainties. However, it is important to note that the proposed supply model criteria aims to increase reliability and confidence in a *premium market* that - in combination with decreasing levelised cost of energy (LCOE) for RES - could provide additional incentives for new and unsupported plants. In terms of consumer information and transparency, all three label options improve

the consumer information by increasing the transparency on ‘additionality information’, ‘the impact on environment such as the fuel mix’ and ‘the governance system’.

For **efficiency**, option 1 is the costliest option as the EU needs to establish a new Regulation to allow for the graded label, followed by option 3 which is regarded as slightly less costly as both the EU and the label organisations need to invest to define the award criteria and to implement and monitor these effectively over the years. Option 2 is the least costly option as it can make use of the existing governance structure of the EU Ecolabel, similarly to option 1. In terms of benefits (i.e. new/additional renewable energy achieved via the fund model) we expect a higher uptake for options 2 and 3 compared to option 1, which makes option 2 the most efficient. With regards to **EU added value**, having an EU-label in addition to the existing private labels that are active in the market is questionable as the extent to which the ‘EU Stamp’ has a positive impact on label credibility and uptake is disputed. Moreover, the extent to which a single EU-label will be in line with the diversity of consumer preferences across EU Member States is expected to be limited.

Compared to the baseline, the three label options have medium added value as the EU-wide label will address the perceived need for increasing consumer information in markets (gas and heating and cooling) which are not sufficiently addressed with the existing labels.

Table 0-1 Overview of the impacts per label option against the baseline

Impact aspect	Baseline	1. New EU label	2. EU Ecolabel		3. Existing labels
Relevance					
Coherence					
Effectiveness			Fund model included	Without fund model	
Efficiency: Label costs					
EU added value					

Green = positive impact or low costs, **yellow** = medium/neutral impact or costs, **red** = limited or negative impact or high costs and **grey** = no information available. For the colour red, we have applied different tints/shades to bring some nuances into the Table. For instance, option 1 was given **dark red** for efficiency as this option is the costliest, followed by option 2.

Conclusions & recommendations

Based on the comparison, we conclude that the option for an EU Ecolabel (option 2), including fund model, is the preferred option. Compared to the baseline, this option shows marginal improvements in e.g. on uptake levels and the deployment of new installations. This options also is the most coherent option as it builds upon an existing EU tool and it is the most efficient among the three label options.

Uptake levels for all options could be increased by using supporting measures such as information campaigns and GPP related measures. Especially the use of the EU-wide label in GPP could boost the positive impacts on e.g. additionality. However, in the most likely uptake scenarios for the EU-wide label (i.e. the low scenario) there is a risk that all options for an EU-wide label are not cost-effective. As such, sticking to the baseline in combination with some other measure(s) to strengthen the existing policy framework, becomes a serious option to consider.

It is important to note that a sufficiently high uptake level (i.e. high scenario of 2%) and a relatively high fund contribution (e.g. 0.5 ct/kWh) are essential to ensure that the EU-wide label will be a cost-

effective instrument for the promotion of renewable energy deployment. However, there is a considerable risk that the EU-wide green label will not see a very high uptake rate and hence have a very limited additional renewable energy deployment. Even though the implementation of an EU-wide green energy label could bring also other benefits (e.g. consumer awareness), sticking to the baseline in combination with some other measure(s) to strengthen the existing policy framework, becomes a serious option to consider.

When an EU-wide label is to be implemented, it is important to implement sufficient flanking measures like awareness campaigns and GPP promoting measures to boost the label uptake as much as possible. For the label to be effective, a sufficiently high fund contribution level is important, but this should be carefully balanced with the impact on the overall energy costs, especially for industrial consumers. This study also found that the market for renewable electricity is much more mature and developed than the market for renewable gases and renewable heat. As such, an EU-wide green label could have a larger added value in those markets, by creating awareness and providing consumers with a credible label. However, for an EU-wide label to make a meaningful contribution in these markets, some other policies are required in parallel:

- **District heating:**
 - Policy measures are needed to increase competition in district heating markets, to provide consumers with the possibility to choose between different types of suppliers.
- **Renewable gases:**
 - Policy measures are needed to increase the availability of renewable gas available within the gas market;
 - In order for a label to effectively proof the sustainable origin of renewable gases, it is important that a reliable accounting system such as a Guarantee of Origin system for renewable gases (which is currently under development) is fully rolled out across Member States.

Several measures could help to strengthen the current policy framework and the consumer information tools, regardless of the implementation of an EU-wide green energy label. These include:

- Strengthening the existing policy framework through:
 - Continued financial support for renewable generation to bridge the gap between LCOE and market prices;
 - Expansion of disclosure obligations for suppliers;
 - For instance, information on their physical electricity procurement, generation activities and investments;
 - Introduction of full disclosure for grey energy tariffs;
 - A robust roll-out of an effective GO system for renewable gases;
 - Promotion of energy offers where physical energy purchases or production by the supplier are linked with the GOs.
- Supporting existing green labels and other consumer information tools in order to increase their impact on increasing renewable energy consumption from additional installations by:
 - Promoting the creation and use of ranking tools;
 - Providing guidelines and/or best practices on additionality criteria with the most impact for adoption by existing green energy labels;
 - Further promoting and strengthening Green Public Procurement for green energy.

1 Introduction

1.1 Objective of this report

The European Commission has appointed a project team consisting of Trinomics, Öko-Institut and Ludwig-Bölkow-Systemtechnik (LBST) to provide “Technical assistance for assessing options to establish an EU-wide green label with a view to promote the use of renewable energy coming from new installations” under framework contract MOVE/ENER/SRD/498-2016 Lot 3. This Final Report presents the results of the different tasks:

- Task 1 Mapping of existing green energy labels;
- Task 2 Analysis of the impacts of existing green energy labels;
- Task 3 Analysis of the scope and of the governance structure of the EU Ecolabel;
- Task 4 Options for establishing an EU-wide energy label;
- Task 5 Impact assessment.

1.2 Background information

The Renewable Energy Directive recast (EU) 2018/2001 (RED II) - which came into force in December 2018 and which should be transposed by Member States by 30 June 2022 (Article 36) - requires a new future-proof framework to be established to meet the binding Union target of at least 32% renewable energy in gross final energy consumption by 2030. The RED II highlights the role of consumers in the energy transition as they have the power to switch to green energy (especially electricity) products and to contribute to transforming the energy system. However, in order to evaluate the contribution of a green energy product to climate protection, consumers must be provided with the necessary knowledge about green energy products and their features. This can be done with appropriate green energy labels.¹⁰ Green energy labels serve to provide consumers with additional non-regulated information and aim to improve their awareness, as they are intended to provide easy to understand information on guarantees of origin (GOs) and sustainability criteria about the energy being offered for sale. Art. 19 (13) of the RED II states that *“The Commission shall adopt a report assessing options to establish a Union-wide green label with a view to promoting the use of renewable energy coming from new installations. Suppliers shall use the information contained in GOs to demonstrate compliance with the requirements of such a label.”*

The study covers labels in the EU and EEA for electricity, heating and cooling and gases (including hydrogen) according to the scope of Art. 19 of the RED II. The term “labelling” is understood as *a third party certification of selected attributes or qualities of a specific energy supplier product and which provides an easy to understand information tag.*

It is important to note that introducing an EU green energy label is particularly linked to other Commission’s policies and initiatives under the European Green Deal¹¹. The European Green Deal is the new growth strategy to transform the EU into a fairer and more prosperous society, which is also modern, competitive and where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. Relevant initiatives under the European Green Deal will have an influence (among others) on consumer information practices and green investments; These

¹⁰ Umweltbundesamt (UBA) (2019). Marktanalyse Ökostrom II: Marktanalyse Ökostrom und HKN, Weiterentwicklung des Herkunftsnachweissystems und der Stromkennzeichnung (Climate Change No. 29/2019)

¹¹ COM (2019) 640.

include, for example, the EU Taxonomy Regulation and upcoming delegated act¹², the green claims initiative¹³, the sustainable product policy initiative¹⁴ and the empowering the consumer for the green transition initiative¹⁵ as well as upcoming legislation and guidance on green public procurement. As such, an EU green energy label would need to be aligned the EU taxonomy for environmentally sustainable investments and comply with any label requirements arising from the initiative on strengthening the role of consumers in the green transition, as well as using a standard environmental footprint calculation methodology to assess their impact on the environment in line with the green claims initiative. Similarly, considerations regarding the EU green energy label with regards to green public procurement would need to be aligned with potential minimum mandatory green public procurement (GPP) criteria and targets in sectoral legislation¹⁶. However, most of these are recent and ongoing policy developments and are therefore not taken into account in the study.

1.3 Structure of this report

The report covers the different tasks of the impact assessment:

- Chapter 1 introduces the project;
- Chapter 2 provides an overview of the methodological approach used;
- Chapter 3 presents the mapping of existing green energy labels;
- Chapter 4 analyses the impacts of the existing energy labels;
- Chapter 5 assesses the suitability of the EU Ecolabel;
- Chapter 6 identifies the options for establishing a Union wide green label;
- Chapter 7 presents the results of the impact assessment;
- Chapter 8 concludes and formulates recommendations;
- Annex A presents additional information on “Additionality through the Renewable Energy Financing Mechanism”

¹² See: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en

¹³ See: https://ec.europa.eu/environment/eussd/smgp/initiative_on_green_claims.htm

¹⁴ See: <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12567-Sustainable-products-initiative>

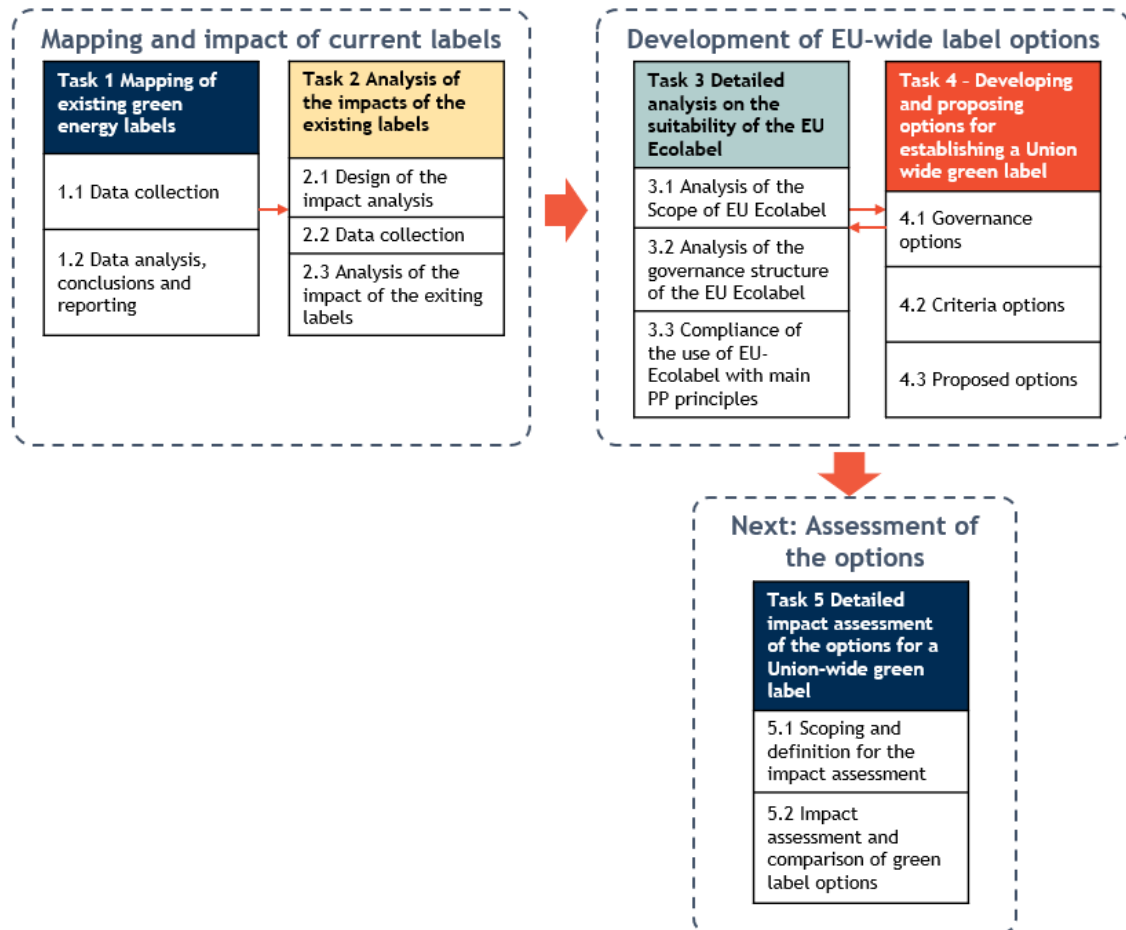
¹⁵ See: <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12467-Empowering-the-consumer-for-the-green-transition>

¹⁶ COM (2020) 98 - [A new Circular Economy Action Plan For a cleaner and more competitive Europe](#) (p.5)

2 Methodology

Figure 2-1 illustrates the three methodological steps of this study and their tasks.

Figure 2-1 -Overview of overall methodological approach



The first step of this study mapped the current labels and their impacts (Tasks 1 and 2). In these tasks, **desk research** was conducted to 1) identify appropriate labels (internet research and meta-studies) 2) describe and characterise the prioritised labels and 2) to learn about the different impacts of green energy labels (literature review and evaluation reports). In both tasks, important **stakeholders were consulted** to 1) identify relevant existing labels 2) ask label organisation to confirm, add or correct data provided by project team about their label(s) and their organisation and 3) survey and interview stakeholders such as consumer organisations and energy retailers to analyse the impacts of the labels. In addition, task 2 built on the findings of task 1 as it covered characterisation of existing labels.

The second main part was focused on developing the label options for an EU-wide label. To do so, it first assessed the extent to which the EU Ecolabel is suitable to be used as an EU-wide label (Task 3). For this legal analysis (**desktop research**) was conducted of literature and research projects. In order to interpret the EU Ecolabel Regulation the **traditional legal methods of interpretation in EU law were applied** (literal, contextual and teleological interpretation as developed and continuously applied

by the Court of Justice of the European Union¹⁷). In parallel the three governance options and award criteria were developed.

In step 3, the impacts of the options are assessed. An impact assessment is a tool to help structure reflection, gather evidence and conduct analyses to inform and support policy design and decision-making. We have used the steps in the Impact Assessment (IA) process described in the Better Regulation Guidelines on IA and the accompanying toolbox to structure our approach:

- **Step 1 & 2: Problem definition & objective setting.** We have used an intervention logic-based approach to establish the logical chain between the identified problems (i.e. limited impact of consumers in additionality) and the solutions considered, as well as to clarify the relationship with other relevant EU objectives and goals;
- **Step 3: Identified green label options based on Task 4 - Governance & award criteria;**
- **Step 4: Mapping, selection and assessment of impacts of the governance and label award criteria options for a Union-wide green label:**
 - **Selection of impacts:** Selection is based on Task 2 results, desk research and taking into account the following selection criteria: 1) Expected overall magnitude, frequency and geographical reach; 2) Relevance for specific stakeholders; 3) Importance for the Energy Union dimensions; 4) Data availability, i.e. is it possible to adequately assess the impact;
 - **Assessment of impacts:** Assessment is based on results of Task 2 and 4, desk research and stakeholder feedback. The assessment also takes into consideration the demand for the new label (to assess the range of the impacts), how this depends on the chosen label option and the possible interaction with existing labels as well as the resources needed. The assessment is quantitative where it is possible (i.e. fund model), for the remaining impacts we used a qualitative scale.
- **Step 5: Comparison of green label options:** The different label options are compared against the counterfactual using the impact assessment criteria. On this basis we draw conclusions and formulate a recommendation on the preferred option(s);
- **Step 6: Monitoring and evaluation of impacts.** Indicators are identified in order to monitor whether the objectives are realised after implementing the preferred option, and to inform any future revisions of the label.

In order to carry out the IA, we have used the information gathered in the previous tasks, combined with further analysis, and a validation step with external stakeholders (i.e. focus group). Members of the focus group are BEUC and RECS International.

¹⁷ Lenaerts K and Gutiérrez-Fons J A (2013). To Say What the Law of the EU is: Methods of Interpretation and the European Court of Justice. EUI Working Paper AEL2013/9.

3 Mapping of existing green energy labels

Task 1 of this project involved a mapping of existing green energy labels in Europe. The overall objective of this task was to gain an overview of existing examples of green energy labels as background for the development of a possible future Union-wide label. The aspects of the labels analysed include their award and verification criteria, governance structures, information on cost and their current level of use. This served as the starting point for the project's future tasks, particularly an impact analysis of the current status quo in energy labels (see chapter 4) and the development of different options for a Union-wide label with respect to governance structures and award criteria (see chapter 6).

The monitoring has been conducted based on an initial data collection, which included a first screening of labels, stakeholder consultation, and desktop research in order to identify relevant European labels and to collect relevant information on these (e.g. criteria documents, annual reports, ...). Based on this information, draft label profiles have been elaborated. In order to ensure a high level of completeness and accuracy of the processed information, the label profiles have been sent to the respective labelling organisations for clarification and confirmation. These data collection activities took place in January to March 2020. Based on the label profiles, an assessment of the overall picture of energy labelling in Europe has been conducted. This cross-cutting analysis for all labels analysed includes general findings on the following aspects:

- Coverage of labels in terms of energy types, market shares, geographical scope, and addressed consumers;
- Conclusions on the typology of criteria, including company-specific criteria, additionality criteria and eligibility/sustainability criteria;
- Conclusions on typical governance structures and related certification procedures;
- The analysis is complemented by a summary of general findings and discussion in the context of the general market situation for the different energy types.

The analysis presented here shows that a broad range of energy labels exist in Europe. However, the labels analysed often have either a strict regional/national restriction, or have a clear focus on where they are applied. While Northern and Central Europe are well covered by labels, the availability and coverage of labels is comparably poor for Southern and Eastern Europe. Figure 3-1 provides an overview over the number of analysed labels active per country. Although one has to bear in mind that the study does not claim to have full coverage of all energy labels in Europe, the methodology above should sufficiently support the selection of relevant labels in terms of volume and level of ambition. However, in principle, individual labels allow the labelling of energy in all EU countries.

The identified and analysed labels mainly address, as expected, electricity. However, there are also a significant number of gas labels that have recently emerged. The number of heat labels identified is very limited. In the case of cooling, only one label has been found which explicitly addresses this energy type within its criteria. Several of the labelling organisations provide labels for different energy types, while other labels focus on e.g. either electricity or gas. Figure 3-2 gives an overview over the number of analysed labels per energy type.

Figure 3-1 Number of analysed labels active per country

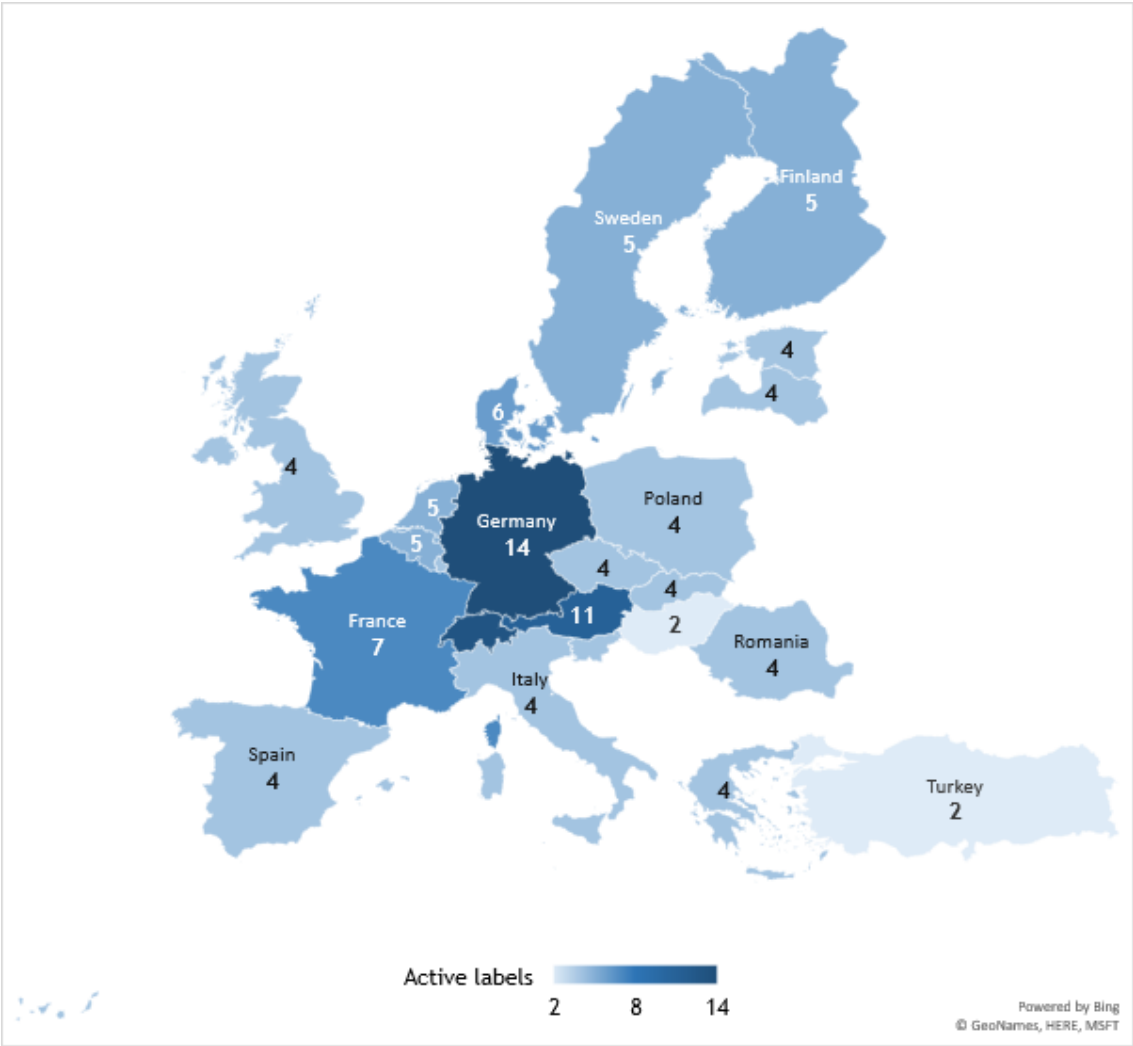
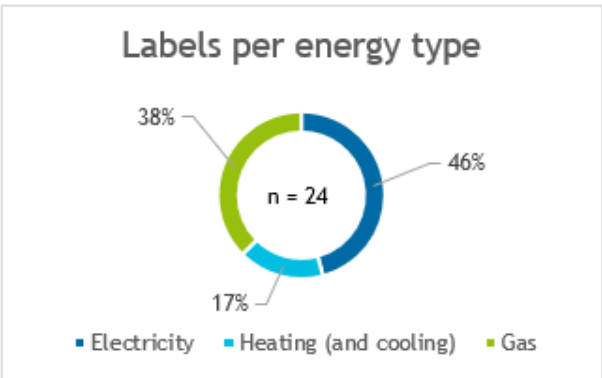


Figure 3-2 Analysed labels per energy type



All the labels analysed only cover a minor market share, well below 1%, of total energy consumption in the countries where they are in principle applied, with the Bra Miljöval electricity label being an exception, with a market share of 2.6 % in the addressed countries, and VSG/GazEnergie Clearinghouse Renewable Gases with a market share for biogas of 1.2% in Switzerland.

Table 3-1 gives an overview of analysed labels' labelling volumes and the respective market shares (in comparison to the final energy consumption for the respective energy types).

Table 3-1 Overview of analysed labels' labelling volumes and the respective market shares (in comparison to the final energy consumption for the respective energy types).

Energy sector	Label name	Geographical scope of the label	Final energy consumption in addressed countries [TWh]	Labelled energy volume [TWh]	Indicative market share	Reference Year
Electricity	Bra Miljöval	Sweden, Norway, Denmark, Finland	375	9,7	2,59%	2018
	EKOenergy	19 EU and EEA countries, plus UK and Turkey	No meaningful data	3	-	2018
	Milieukeur	The Netherlands, Belgium	198	No information available	-	-
	Grüner Strom Label	Germany	525	1,3	0,25%	2018
	Naturemade basic	Switzerland, Germany, France, Austria, Norway	1.224	6,8 ¹⁸	0,56%	2018
	Naturemade star					
	TÜV Süd EE01	Germany, Austria, France, Switzerland	1.096	4,1	0,37%	2018
	TÜV Süd EE02	Germany, Austria, France, Switzerland	1.096	1,2	0,11%	2018
	TÜV Nord A75-S026-1	Germany, Austria, Switzerland	648	No data	-	-
	ok-power	Germany	525	3,5	0,67%	2018
Heat	Österreich. Umweltzeichen	Austria	65	No data	-	-
	Bra Miljöval	Sweden	51	1,7	3,33%	2018
	EKOenergy	Expected to be worldwide	No meaningful data	Confidential information	-	-
	Naturemade basic	Switzerland	n.a.	0,143	-	2018
Gas	Naturemade star	Switzerland	n.a.	0,005	-	2018
	CertifHy	EU level	No meaningful data on H ₂	No data	-	-
	EKOenergy	Worldwide (40 countries in 2018)	No meaningful data	No data	-	-
	Grünes Gas Label	Germany	2.504	0,39	0,02%	2018
	Bra Miljöval	Sweden (partly Norway)	593,39	0,15	0,03%	2019
	TÜV Nord Climate Neutral Gas	Mainly Germany	2.504,78	No data	-	-
	TÜV Süd Green Hydrogen	Worldwide (mainly Germany, Europe)	No meaningful data on H ₂	No data	-	-
	"VSG/GazEnergie Clearinghouse Renewable Gases"	Switzerland	230,80	0,368	0,16%	2018
	Naturemade star	Mostly Switzerland (AT, DE, DK, FR, HU, NO)	230,80	0,582	0,25%	2017

Information on final energy consumption taken from Eurostat and IEA data.

¹⁸ Total labelled electricity volume for both Naturemade basic and Naturemade star.

The limited application of heat labels is consistent with the fact that there is only a small end-consumer market for heat from external heat suppliers, which means that labelling only has a limited number of potential customers who could make use of a consumer information instrument. However, there is a specific field of application for district heating where various suppliers can in principle compete for the heat supply of a given consumer.

The labels analysed apply a broad range of criteria. In many cases the criteria can be better understood in the context of the national markets in which the labels are applied. This refers both to the focus of aspects addressed and to the means of documentation, which partly take the national regulatory framework into account. Company specific criteria are applied by many labels, but not all. Systematic conclusions on the labels for the different energy types can only be made to some extent. However, it is obvious that e.g. a potential involvement of suppliers in the nuclear sector is not as relevant as a criterion for heat and gas labels as it is for some electricity labels.

With respect to the discussion on additionality criteria of the analysed labels, one should bear in mind that many of the labels which have been analysed have been selected for their inclusion of additionality criteria, which obviously leads to a bias in the overall picture; and many labels which are not covered here do not have additionality criteria. However, this selection has been in the scope of this study in order to cover the full spectrum of applied additionality criteria in the analysis.

There are multiple additionality criteria for electricity labels, including a broad variety of fund model approaches, “new” or “additional” plant requirements for the supply, and other approaches. For heat and gas labels, one can generally see a lower relevance of the “new plant” requirement, while the application of the fund model approach is also quite common for those energy sectors. With respect to the accepted use of the respective funds, it is notable that a lot of electricity labels (though not all) focus their funds fully or at least partially on the support of renewable plants, or related measures in the energy system. The gas labels analysed have an equal focus on using this money for sustainability measures or for renewables. Table 3-2 provides overview of different additionality criteria and their application by the analysed European green energy labels. Most of the labels analysed apply several of the criteria outlined above. Depending on the label, these criteria either have to be fulfilled by the licensee as alternatives or also to the full extent. Some labels also allow for a combination of the options in the sense of a “scoring system”, meaning that the respective fulfilment of different criteria can be added up in order to achieve a minimum threshold for the overall level of ambition for this label. The range of required fund contribution is quite limited for all labels analysed compared to electricity generation cost. The range of required fund contribution per kWh of labelled energy strongly varies between the different labels and also depends on other factors (e.g. on the type of energy production used).

The eligibility criteria which have been identified show clear differences depending on the relevant energy type. Thus, eligibility criteria for hydropower has a prominent role for some of the electricity labels, while it is hardly relevant for heating and gas. Biomass is addressed throughout all the energy sectors. With respect to gas, a specific relevance was identified for the role of GHG balances for hydrogen, which is applied by hydrogen-specific labels as a central criterion.

Labelling organisations have been found to have different organisation types: NGOs (notably environmental), membership-based not-for-profit organisations, which can have for-profit companies

(producers and consumers) as members as well as other stakeholders such as environmental or consumer NGOs, for-profit companies, public bodies and industry associations. Depending on their organisation type, many labelling organisations have open or restricted membership. With one exception being where labelling criteria are fixed by national law, all other labelling organisations have had stakeholder consultations for criteria development. Some have regular consultation processes (often in the form of an advisory board including external stakeholders), others consult stakeholders on an ad-hoc basis when the necessity arises to adjust the criteria. Table 3-2, Tables 3-3 and 3-4 provide an overview of governance elements of labelling organisations for the analysed labels.

Table 3-2 Overview of different additionality criteria and their application by the analysed green energy labels

	Label name	Fund	Supply from “additional” plants	Other
		1 RES 2 Efficiency 3 Innovation 4 Sustainability 5 Information 6 Compensation	1 New/refurbished 2 Existing “additional” 3 New technologies 4 Correction of national statistics 5 Restriction on unsupported	
Electricity	Bra Miljöval	1 2 4		
	EKOenergy	1 (4) ^a (6) ^b		
	Milieukeur		(4) ^c	
	Grüner Strom Label	1 2 3 4 5		
	Naturemade basic		3	
	Naturemade star	4	3	
	TÜV Süd EE01	1 6	1 3 (5) ^d	
	TÜV Süd EE02	(1) ^e		(X) ^f
	TÜV Nord A75-S026-1		1 5	
	ok-power	(1) ^g 2 3 (5) ^h	1 2 5	X ^{ij}
	Österreichisches Umweltzeichen		1 3	X ^k
Heat	Bra Miljöval	1 2		
	EKOenergy	1 4		
	Naturemade basic		3	
	Naturemade star	4		
Gas labels	CertifHy			
	EKOenergy	1 4 5		
	Grünes Gas Label	1 2 3		
	Bra Miljöval	4		
	TÜV Nord Climate Neutral Gas			
	TÜV Süd Green Hydrogen	1 2 3 6	1	
	VSG/GazEnergie Clearinghouse Renewable Gases			
	Naturemade star	4		

a: for supply from hydro power; b: Cancellation of ETS allowances, as soon as there are signs for shortages in the market; c: Requested for imports --> excluded in practice; d: no production support; e: no fix amount, but share of possible price-premiums (if any) on the labelled product; f: real-time production requirement; g: only accepted for innovative RES-E technologies or applications; h: only allowed to a limited extent; i: initiation requirement for own plants; j: partial acceptance of project development cost for RES-E plants who have not succeeded in national tendering for support; k: initiation requirement

Table 3-3 Overview of governance elements of labelling organisations for the analysed labels (1)

	Label name	Type of organisation 1 NGO (e.g. env.) 2 public body 3 industry association 4 membership-based not-for-profit organisation 5 for-profit company 6 Other	Independence from market interests Yes; Yes, with reservations; No	Stakeholder consultations Yes - regular Yes - ad-hoc Yes - with reservations No	Membership to labelling org. 1 open 2 restricted 3 no 4 other
Electricity	Bra Miljöval	1	Yes	Yes - ad-hoc	1 (personal membership to env. NGO)
	EKOenergy	1	Yes	Yes - regular	2 (only env. NGOs)
	Milieukeur	1	Yes	Yes	
	Grüner Strom Label	1	Yes	Yes - regular (with reservations ¹⁹)	4 restricted network of env. NGOs
	Naturemade basic	4	Yes, with reservations ²⁰	Yes - regular	1
	Naturemade star	4	Yes, with reservations	Yes - regular	1
	TÜV Süd EE01	5	Yes, with reservations ²¹	Yes - ad-hoc (with reservations ²²)	3
	TÜV Süd EE02	5	Yes, with reservations	Yes - ad-hoc (with reservations)	3
	TÜV Nord A75-S026-1	5	Yes, with reservations ²³	unclear	3
	Ok-power	1	Yes	Yes - regular (with reservations) ²⁴	4 network of non-profit research org.
	Österreichisches Umweltzeichen	1, 2	Yes	unclear	no
Heat	Bra Miljöval	1	Yes	Yes - ad-hoc	1 (personal membership to env. NGO)
	EKOenergy	1	Yes	Yes - regular	2 (only env. NGOs)
	Naturemade basic	4	Yes, with reservations ²⁵	Yes - regular	1
	Naturemade star	4	Yes, with reservations	Yes - regular	1
Gas	CertifHy	6 to be legally established	Yes, with reservations	yes - regular	1
	EKOenergy	1	Yes	yes - regular	2 (only env. NGOs)
	Grünes Gas Label	1	Yes	yes - regular (with reservations) ²⁶	4 restricted network of env. NGOs
	Bra Miljöval	1	Yes	yes - ad-hoc	1 (personal membership to

¹⁹ Different stakeholders are represented in the Advisory Board

²⁰ Naturemade has a Board which consists of various members, partly being market participants with own market interests

²¹ TÜV Süd is organisationally independent from own market interests, but have - as not being a non-profit organisation themselves - have to some extent own commercial interests

²² External experts are represented in the Certification Advisory Board

²³ TÜV Nord is organisationally independent from own market interests, but to some extent have - as a non-profit organisation themselves - their own commercial interests

²⁴ External experts with different background are represented in the Criteria Advisory Board

²⁵ Naturemade has a Board which consists of various members, partly being market participants with own market interests

²⁶ Different stakeholders are represented in the Advisory Board

Label name	Type of organisation 1 NGO (e.g. env.) 2 public body 3 industry association 4 membership-based not-for-profit organisation 5 for-profit company 6 Other	Independence from market interests Yes; Yes, with reservations; No	Stakeholder consultations Yes - regular Yes - ad-hoc Yes - with reservations No	Membership to labelling org. 1 open 2 restricted 3 no 4 other
				env. NGO)
TÜV Nord Climate Neutral Gas	5	Yes, with reservations ²⁷	unclear	3
TÜV Süd Green Hydrogen	5	Yes, with reservations ²⁸	yes - ad-hoc (with reservations)	3
"VSG/GazEnergie Clearinghouse Renewable Gases"	3 (under supervision of public authority)	no (union of gas suppliers)	no (based on national policy)	1 (gas suppliers)
Naturemade star	4	Yes, with reservations	yes - regular	1

All except one labelling organisation (for which criteria are based on national law) take the final decision on criteria internally. Some labelling organisations include stakeholders in their decision-making bodies. The vast majority of labelling organisations are fully independent of market interests, or at least with certain reservations. The latter can be made where producers or suppliers are members, or where the labelling organisation pursues commercial interests (for-profit company) and may thus be subject to their customers' interests. With respect their financing, labelling organisations mainly rely on fees for labelled products and on membership fees. Public funding is only available to a very few organisations, and a few have other sources of income.

All electricity labels build on information contained in the Guarantees of Origin (GOs)²⁹ with respect to supplied electricity. In addition to the information provided according to Art 19 RED II, this documentation is also used to verify the matching of production volumes and consumer supply volumes. This is a particularly relevant finding with a view to the requirement of Art. 19 (13) that suppliers should use GO information for proving compliance with a potential future Union-wide label (although it is expected that this requirement is not necessarily exclusive). For renewable hydrogen, CertifHy has established an independent GO scheme in Europe. For input electricity or methane for hydrogen production processes, CertifHy foresees the use of GOs as a standard. TÜV Süd Green Hydrogen accepts electricity GOs for the verification of input electricity for hydrogen production. Most, but not all, biomethane labels accept biogas GOs for the verification of those criteria for which the GOs contain information on.

Many of the labels' criteria are documented by separate means of proof, including documentation by other legal or public certification schemes, or individual audits by independent auditors. Some of this documentation could be implemented on GOs as additional "label" earmarks.

Table 3-4 Overview of governance elements of labelling organisations for the analysed labels (2)

²⁷ TÜV Nord is organisationally independent from own market interests, but have - as not being a non-profit organisation themselves - have to some extent own commercial interests

²⁸ TÜV Süd is organisationally independent from own market interests, but have - as a non-profit organisation themselves - their own commercial interests to some extent.

²⁹ An electronic document which has the sole function of providing proof evidence to a final customer that a given share or quantity of energy was produced from renewable sources.

Label name		Decisions on criteria taken by	Funding of the organisation	Publication of labelled products?
		1 Labelling organisation (internal) 2 Stakeholder body within labelling org. 3 independent body 4 other	1 public funding 2 fee for labelled products 3 membership fees 4 other	yes / no
Electricity	Bra Miljöval	1	2 (primary), 3, 4 (donations, grants)	Yes
	EKOenergy	1 (internal body open to all members)	2, 4 (grants)	Yes
	Milieukeur	2	(1) ³⁰ , 2	Yes
	Grüner Strom Label	1	2	Yes
	Naturemade basic	1 (various internal bodies open to all members)	2	Yes
	Naturemade star	1 (various internal bodies open to all members)	2	Yes
	TÜV Süd EE01	1	2	Yes
	TÜV Süd EE02	1	2	Yes
	TÜV Nord A75-S026-1	1	2	No
	Ok-power	2 (Criteria Board with external experts)	2	Yes
	Österreichisches Umweltzeichen	unclear	Unclear	Yes
Heat	Bra Miljöval	1	2 (primary), 3, 4 (donations, grants)	Yes
	EKOenergy	1 (internal body open to all members)	2, 4 (grants)	Yes
	Naturemade basic	1 (various internal bodies open to all members)	2	Yes
	Naturemade star	1 (various internal bodies open to all members)	2	Yes
Gas	CertifHy	2 (stakeholder platform)	1,2	No
	EKOenergy	1 (internal body open to all members)	1	Yes
	Grünes Gas Label	1	2, 3, 4 (income from events)	Yes
	Bra Miljöval	1	2 (primary), 3, 4 (donations, grants)	Yes
	TÜV Nord Climate Neutral Gas	1	2	No
	TÜV Süd Green Hydrogen	1	2	No
	"VSG/GazEnergie Clearinghouse Renewable Gases"	4 (based on national policy; supervision by public authority)	3	No
	Naturemade star	1 (various internal bodies open to all members)	2	Yes

With respect to costs for certification and labelling, it can be considered a standard that the applied labelling and certification fees contain flexible and usually volume-depending elements. Therefore, it is difficult to make a general comparison for the absolute cost of being labelled.

The findings which have been outlined above have been used as a baseline for the impact analysis which has been conducted by Trinomics as the next step of the project (see chapter 4). At the same time, the project team has developed options for a Union-wide green energy label both with respect to

³⁰ SMK, the managing organisation of Milieukeur, receives no public funding for the Milieukeur certification programme. However, it being the Dutch Competent Body of the EU Ecolabel of the European Commission, SMK receives some financial support by The Ministry of Infrastructure and Water Management, which is only to be used for the EU Ecolabel activities of SMK.

award criteria and to governance options based on the identified real-case examples (see chapter 6). These will be subject to an impact analysis in order to substantiate the feasibility and possible effect of these different options as compared to the status quo.

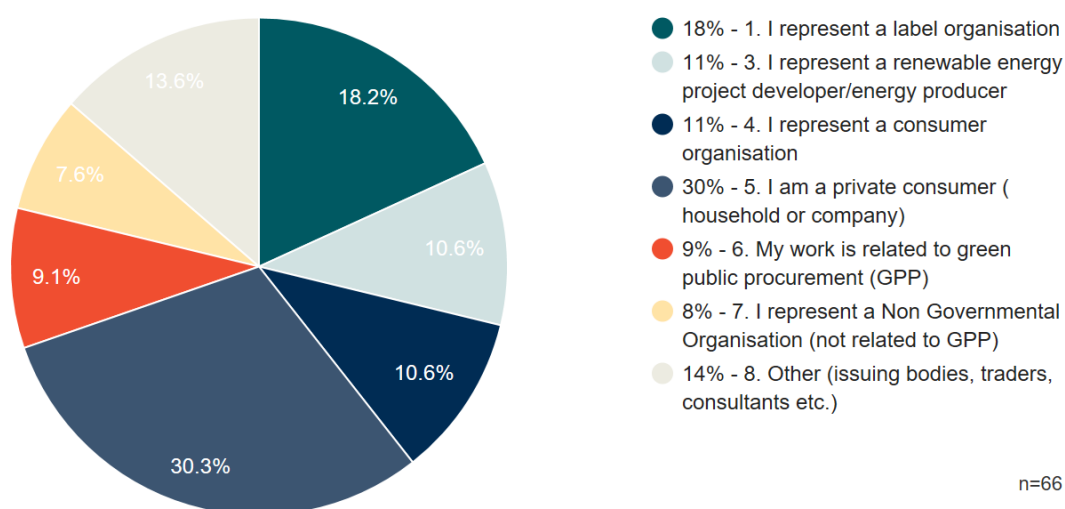
4 Analysis of the impacts of the existing labels

The overall objective of this task is to analyse the impacts of the existing labels, in terms of enhanced consumer information and awareness, better function of the internal energy market, improved public procurement of green energy, promotion of specific energy sources and an increase in demand for renewable energy as well as triggering additional renewable energy capacities.

To collect information on the impacts of green labels, desk research and information from task 1 was used. In addition, we conducted the following:

- **Stakeholder survey**, which was launched at the beginning of April using CheckMarket and was live for 7 weeks (from 12 March to 30 April 2020). The survey was completed by 66 respondents (see Figure 4-1) over 21 European countries with several respondents based outside Europe (e.g. Australia, US or developing countries). The countries best represented are the Netherlands with 15 responses, followed by Germany with 11 responses, Belgium with 5 responses and lastly Finland with 4 responses. We experienced a low response rate which is partly due to the Covid-19 virus. In the analysis of the survey we corrected for the bias that label organisations might have caused;
- **Interviews** were conducted to fill missing information gaps and to further explore certain findings derived from the literature review or survey analysis. In total five interviews were conducted, with experts in green public procurement (n=2) and retailers (n=3).

Figure 4-1 Overview of the responses from each stakeholder group



Analysing the impacts of the green labels is **challenging** for the following reasons:

- Labels present a small and concentrated market share covering only a few member states. As such, the results of the analysis will be biased to those market and lowers the external validation the study;
- Impacts of energy labels are difficult to measure as they only present a small market share and other factors may also explain certain results;
- The information about gas, heating and cooling is scarce, especially for certain impact areas such as impact on GPP.

4.1 Improved consumer information and awareness

Consumers can contribute to the energy transition by choosing green energy contracts. Although, demand for such energy contracts is rising, it is (still) too low to match the supply of available renewable energy. The literature reveals several reasons in relation to consumer information and awareness that may explain this low demand:

- **Complex energy market.** The energy market and the different types of energy technologies and sources are complex issues that are difficult to understand for the ‘normal’ consumer.³¹;
- **Lack of information regarding (green) energy contracts.**³² In addition, many Member States have not yet implemented the minimum requirements on fuel mix disclosure, thus consumers may not know their energy’s origin or environmental footprint.³³;
- **Misleading information about green energy contracts.** A study by the consumer group Bureau Européen des Unions de Consommateurs (BEUC) (2017) found that suppliers’ unbundled purchase of GOs leads to misleading ‘green’ offers as the consumer expects that the renewable share expressed in the fuel mix matches a cash flow to renewable power plants.³⁴ At the same time energy consumers spend little time collecting information as the price remains the most important factor in the purchasing decision in many cases.

Given the above, there is a **need for credible and trustworthy information** to compare offers, especially since the green energy market is a premium market (with consumers paying a higher energy price). The impact of existing labels on consumer information and awareness is summarised below.

Labels increase and improve consumer information. Based on the literature review, findings of task 1 and the survey, we conclude that labels have an impact on consumer’s information. Especially for the small group of consumers (both households and companies) who are environmentally aware and are interested in green energy solutions, the energy labels are a good source of information. Labels increase the amount of information given to the consumer by having company specific criteria, criteria on new installations, other additionality criteria and by having eligibility and environmental criteria (see chapter 3). As such, certain criteria (e.g. information about the retailer’s investments) complement the information given with GOs.

Labels may also be a good tool to determine the ranking of green energy offers. Rankings have been shown to support consumers in making their purchasing decision.³⁵ Rankings could respond to consumers’ need for a comparison tool that compares the sustainability performance of different energy offers (and/or suppliers) and information about the source of their energy.

The information provided by label organisations on their websites is easier to understand for well-informed citizens. However, label information may be better understood by consumers than information provided by the GO system, and thereby act as a clarifying shortcut. Moreover, labels help the consumer to formulate a value-based preference for certain energy products (Bra Miljöval focus mainly on reducing environmental damage from RES whereas ok-power put an emphasis on additionality).

While the consumers’ familiarity with labels differ between countries, we see that in general **consumers are not familiar with green energy labels**, this corresponds with the small market size of

³¹ BEUC (2017). Energy markets of the Future: How the EU’s Energy transition should work for consumers. BEUC policy paper.

³² BEUC (2017). Stalling the switch 5 barriers when consumers change energy suppliers.

³³ The Internal Electricity Market Directive (2009/72/EC, art. 3(9) states that consumers should be provided with information about the overall fuel mix of their supplier.

³⁴ *Ibid.*

³⁵ European Commission (2014). Study on the coverage, functioning and consumer use of comparison tools and third-party verification schemes for such tools. By ECME in partnership with Deloitte.

labels (see chapter 3). Consequently, the label organisations' **impact is low as labels serve a small group of critical consumers.**

It was also found in the literature and the survey that **multiple green energy labels cause confusion among consumers and energy producers.** Especially since different labels use different criteria which make it difficult to understand and to determine what their effects in the energy transition are.

Labels provide credible information about the environmental characteristics of green energy products. The need for credible information was expressed in the survey and literature review by both household consumers and corporate consumers. In stakeholder interviews it was mentioned that this also applies for the green gas market as the information on the origin and sustainability of the gas supply is less developed than for the electricity market. In addition, while companies purchase GOs to match (at least a part) of their consumption of electricity, not all companies trust the GO system as they think purchasing GOs provides limited additionality.³⁶ As such, labels respond to the consumers need for credible information including the avoidance of 'green washing' practices. However, we also found that the need for credible information about the green characteristics of energy depend on the disclosure practices of each Member States. Label organisations only play a small role in bringing clarity and transparency in the energy market as other information, such as fuel mix information also needs to be improved. Other interviewees thought the supply of credible information for the gas market could also be achieved through a full implementation of a GO system, like in the electricity market.

There is some evidence that labels increase consumer demand for clean (labelled) energy. Labels increase the trust in marketing claims made by suppliers and therefore increase consumers' willingness to buy labelled energy. In addition, energy efficiency labels have been shown to improve awareness and willingness to pay.³⁷ There has also been an increased demand by (corporate) consumers for a physical link between generation and consumption of renewable energy (often in the form of Power Purchase Agreements (PPAs), as it is easier to understand, control and explain "the greenness" of the consumed energy to consumers. However, other consumer preferences, such as price, play a more significant role in supplier switching.

Labels have limited impact on consumer awareness

The survey results indicated consumers of labelled products have a greater feeling of contributing to the energy transition. In addition, a few label organisations actively include consumers in their consultation process and some organisations are involved in advocacy work. However, this only represents a small share of energy consumers and therefore the impact is limited. Raising consumer awareness requires other actions than simply labelling the energy. In the survey it was mentioned that a full disclosure system is a better way to improve consumer awareness.

³⁶ European Commission (2019). Competitiveness of corporate sourcing of renewable energy; Part 2 of the Study on the competitiveness of the renewable energy sector; Final report; ENERG/C2/2016-501; Brussels, 28 June 2019.

³⁷ Sammer and Wüstenhagen (2005). The Influence of Eco-Labeling on Consumer Behaviour - Results of a Discrete Choice Analysis.

4.2 Functioning of the energy market and the supplier switching

Over the last 25 years the EU has been working on the integration of the energy markets of EU Member States into a single EU market and the liberalisation of energy markets.³⁸ Although, clear progress has been made across the board, there are still considerable differences between Member States in the level of competition between different suppliers and the degree of integration with neighbouring markets. This section summarises the impact of green energy labels on 1) Supplier switching, 2) The number and variety of green tariffs offered, and 3) Cross-border trade.

From our analysis we find no apparent link between the level of green label activity in energy markets and supplier switching rates. The frequency of supplier switching in the electricity and gas markets varies widely between Member States.³⁹ The Member States that are well-known for their competitive energy markets, such as the UK, Ireland, The Netherlands and Germany are countries that also display high supplier switching rates. However, there are vast differences between these countries in the extent to which labels play a role in their energy markets, where green labels play a large role in the German market, whereas the role of labels is much more marginal in the other markets mentioned.

Although green energy labels do not seem to have affected supplier switching rates, they may have affected the actual choice of products during the switch. It is possible that green labels can help consumers judge the validity of the company's 'green credentials'. However, it was also mentioned in the survey, that the credibility provided by green energy labels could also act as a reason for consumers with a labelled contract to stick to their supplier, thereby inhibiting supplier switching.

It is highly unlikely that green energy labels have increased the number of green tariffs in EU energy markets, but they have offered a means of diversifying the supply of green energy tariffs. The number of green tariffs and share of these tariffs in the overall product offer has grown substantially in most EU Member States during the last decade. However, there is a large variation between Member States in the share of green contracts in the overall product offer.⁴⁰ This variation seems to be primarily driven by differences in consumer preferences,⁴¹ where countries with stronger environmental awareness and higher income per capita show the highest shares of green energy tariffs. **There is no clear correlation between the activities of green energy labels in certain markets and the share of green energy tariffs being offered in the market.**

In most countries, **GOs are clearly the dominant means for 'proving' the renewable origin of the energy supplied with green contracts.** This corroborates our finding that most consumers interested in green energy tariffs,⁴² just want their energy to be of renewable origin and have no further requirements.

However, in markets with a large green tariff offer it can be observed that suppliers start **differentiating their offers to appeal to specific consumer segments**, by selling renewable energy complying with additional criteria or where a stronger link is made between the energy sold in the contract and the physical supply (e.g. through PPAs between a renewable energy producer and an

³⁸ European Commission (2014). Electricity market liberalisation.

³⁹ Council of European Regulators (CEER) (2019). Monitoring Report on the Performance of European Retail Markets in 2018.

⁴⁰ European Commission (2016). Second consumer market study on the functioning of the retail electricity markets for consumers in the EU.

⁴¹ *Ibid.*

⁴² This view came back several times in the stakeholder survey as well as in targeted interviews.

energy retailer). There are several ways in which energy suppliers can diversify their offer and applying for a label is one of these.

Several stakeholders indicated that they observe an **increasing demand from consumers for locally produced renewable energy**,⁴³ because they want to make a contribution to the energy transition in their own country or region. Some suppliers are already actively marketing their green energy tariffs by highlighting the national origin of the energy they sell, through GOs, sometimes accompanied by a green energy label or through PPAs with domestic renewable energy producers.

One of the indicators for market functioning is the level of cross-border trade. Although the physical energy market is mostly governed by differences in energy prices due to local and temporal imbalances, the trade in renewable energy, at least in the electricity market, mostly takes place through the trade in GOs. In recent years, national GO systems have become more and more harmonised and nowadays there is active trade in GOs across European countries.⁴⁴

Green energy labels appear to have little impact on the trade in renewable energy. Firstly, this is the case because the labelled energy volume is still very low and therefore the impact on trade is marginal. As explained below, (some) green labels might indirectly promote the consumption of specific types of renewable energy, but due to the high availability of different energy sources in the market this is unlikely to affect cross-border trade in most cases. It should be noted that the picture may be slightly different in the market for renewable gas, where supply is still limited, and labels sometimes need to rely on foreign installations to obtain sufficient supply levels. However, there are also labelled energy contracts that specifically market renewable energy from the domestic market. If the demand for this kind of contract increases, cross-border trade in renewable energy might be negatively affected.

4.3 Use of the labels in EU public procurement

Governments play an important role in the decarbonisation of our energy system as their energy consumption represents a large share of the energy market: EU public authorities accounted for 6-7% of European electricity consumption.⁴⁵ In 2016, government expenditure on works, goods and services represents around 14% of EU GDP, accounting for roughly EUR 1.8 trillion annually.⁴⁶ However, Green Public Procurement (GPP), is to a large extent a voluntary instrument and its application depends on the ability and interest of the Member States and public procurement authorities, resulting in large differences in uptake among the Member States.⁴⁷

There are several barriers for the implementation of GPP, including; 1) lack of political support; the importance of price factor in tenders (or the perception that green products are more expensive), 2) lack of knowledge about environmental benefits such as ensuring additionality; 3) lack of legal expertise in applying environmental criteria.^{48,49}

⁴³ This came forward in several interviews, and from existing studies such as: HIER (2020). 40% Nederlanders wil groene stroom uit Nederland.

⁴⁴ RECS International (2019). Development of the guarantees of origin MARKET 2009-2018.

⁴⁵ BRE (2011). Green Public Procurement - Electricity - Technical Background Report.

⁴⁶ European Commission and ICLEI (2016). Buying green! A handbook on green public procurement 3rd Edition. ICLEI - European Commission and Local Governments for Sustainability, supported by Public Procurement Analysis (PPA).

⁴⁷ Renda, A. et al. (2012). The Uptake of Green Public Procurement in the EU 27, Centre for European Policy Studies and College of Europe.

⁴⁸ European Commission (2019). Environment, Green Public Procurement: Barriers to the take-up of GPP.

⁴⁹ Bouwer et al. (2006). Green Public Procurement in Europe 2006 - Conclusions and recommendations.

The case for labels here is to support public procurers in the use of green energy criteria in procurement so that the uptake may increase and GPP for electricity contributes to the deployment of new installations. The impact of existing labels on green public procurement for energy is summarised below.

Labels can improve the green public procurement for energy by making it easier for procurers to include environmental criteria. Procurers often have low awareness or have difficulties understanding the complex issues related to additionality and the generation of other environmental benefits. Labels may help overcome these issues. Labels may also help procurers respond to the rising demand by local councils and government departments for locally sourced green electricity.⁵⁰ In addition, the labels increase the credibility of environmental claims made by the bidders.

Green energy labels often possess characteristics that are of great use for procurement. These are 1) underlying criteria set by an independent body, 2) criteria are based on life cycle considerations and 3) criteria are monitored by a third party auditing process (also referred to Type I or Type I-like labels according to ISO 14 024).⁵¹ Not all label organisations directly target public procurers. Although at least eight labels are suitable for use in electricity GPP, it remains a question as to what extent each label and its criteria align with the Public Procurement Directive 2014/24/EU (see Chapter 5 for more information on the legal requirements). Labels have been used, in general, to define criteria and are applied as underlying criteria in technical specifications, award criteria, contract performance clauses and as a verification of compliance. The fact that green energy labels are most frequently used on electricity is also a benefit as this is the energy carrier most frequently addressed in GPP.

However, as **many public authorities are not even aware of the potential role of labels and their criteria in the procurement process**, the impact has been low so far. Furthermore, the price component remains the most important criteria in the evaluation of a bid, although the purchase of renewable energy does often not lead to an increase in price.

Due to a lack of data it is difficult to determine the extent to which labels have been used in GPP. Several reports stated that **the use of labels in GPP is often the highest in countries with strong guidance on GPP and where the uptake of GPP is high.**^{52,53} For example, in Sweden there is strong guidance on GPP and from a survey it showed that more than 50% of the respondents made use of criteria from ecolabels to help making the purchasing environmentally compliant.⁵⁴ Strong guidance on GPP is important as there is often a gap between national ambition for GPP criteria and its realisation. Barriers such as a lack of awareness, information or financial resources cause this. In some countries, there are multiple labels active and they all differ in their approaches and award criteria (e.g. age of power plant, different stakeholders in the set-up). This causes confusion and makes the use of labels less effective. **Harmonisation of label criteria would make the case for labels in GPP of energy stronger.**

⁵⁰ UBA (2019). Marktanalyse Ökostrom II. Marktanalyse Ökostrom und HKN, Weiterentwicklung des Herkunftsnachweissystems und der Stromkennzeichnung Abschlussbericht

⁵¹ ICLEI (2016). The Procura+ Manual: A Guide to Implementing Sustainable Procurement. 3rd edition

⁵² PricewaterhouseCoopers, Significant and Ecofys (2009). Collection of statistical information on Green Public Procurement in the EU Report on data collection results.

⁵³ Ihmäki, V., van Ooij, E., & van der Panne, S. (2014). Green public procurement in the European Union and the use of eco-labels.

⁵⁴ Swedish Environmental Protection Agency (2013). Green Public Procurement A tool for achieving national environmental quality objectives.

4.4 Promotion of specific sources of energy

There has been a rise in green electricity demand; however, impacts vary across the sources of energy. While renewable energy is statistically regarded as climate neutral, there is controversy regarding the sustainability of certain energy sources (e.g. imported palm oil, wood from unsustainable sources, hydropower plants destroying natural river ecosystems).

Green energy labels tend to apply additional stricter eligibility criteria than suppliers in order to reduce the environmental impact of energy. They do this by defining which ecological and technology specific standards energy generation plants have to meet in order to qualify and which technologies are excluded in the scope of the scheme (e.g. nuclear, fossil fuelled electricity generation).⁵⁵ The application of such eligibility criteria has the primary effect of distinguishing existing production capacities and volumes, thus ensuring that on a more general level only “clean energy” is covered by the label. The application of such eligibility criteria can also be considered to enhance the public credibility and the political signalling of green power labelling.

The energy labels assessed mostly restrict their eligible energy to renewable sources and exclude energy or fuel from protected or ecologically sensitive areas. Most labels also apply biomass-specific criteria (e.g. feedstock from residues or FSC certified forestry, excluding primary palm oil and GMOs). Specific criteria are also often applied for hydropower (such as additional contribution to a fund). Gas labels also have specific eligibility criteria (such as greenhouse gas balance or CO₂ footprint thresholds for hydrogen).

Energy labels have an impact on the promotion of specific energy sources through their eligibility criteria and specific premiums per energy source, though this is limited due to the small market share of labels. There is no information on the share of different RES sources for the different labels. However, within the electricity labels, wind and PV are promoted indirectly, given the additional requirements and eligibility criteria in place towards hydro power and biomass (as well as to renewable gases). Given that cancelled GOs are to a large extent from hydropower, which often raises environmental debates, energy labels could be a way of bringing more product differentiation and creating products that offer energy that is derived solely from less controversial sources of energy.

4.5 Promoting consumers use of renewable energy from new installations & triggering installation of additional renewable generation capacities

Art. 19 (13) of the RED II stipulates that *“The Commission shall adopt a report assessing options to establish a Union-wide green label with a view to promoting the use of renewable energy coming from new installations. Suppliers shall use the information contained in GOs to demonstrate compliance with the requirements of such a label.”* Therefore, assessing the impact on new installations is a key focus of this project in order to provide substantial background for such a report by the Commission. There are several models through which green energy labels aim to promote additional renewable energy capacity, namely through financial support to renewable energy projects (fund model), the supply model (e.g. criteria for new installations), and the initiation model⁵⁶.

⁵⁵ Öko-Institut et al. (2007). Green power labelling: An instrument to enhance transparency and sustainability on the voluntary green power market.

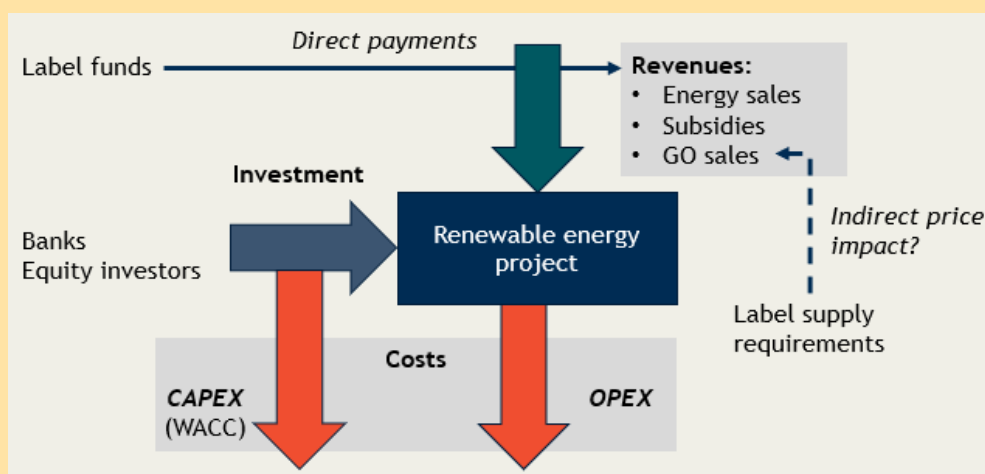
⁵⁶ The initiation model is based on the obligation for electricity providers to actively contribute to the expansion of renewable electricity generation by means of renewable electricity project development and financing efforts in new generation plants.

Box 4-1 The business case of RES projects

During the last decade, there has been a vast growth in the renewable energy production capacity in Europe, driven by the renewable energy policy targets, support schemes and declining costs of renewable technologies. Support schemes aim to bridge the gap between the (levelised) cost of energy (LCOE) production in conventional power stations and RE plants. For RE plants, we see that there are three main streams of revenue, namely energy sales, subsidies and sales of guarantees of origin (where such a market exists). In most cases, the former two factors are by far the largest components of the project revenue. However, in some markets where demand for renewable energy is growing, the revenues from GO sales can also become larger, although mostly still less than 5% of the total project income.

The figure below gives an overview of the business case of renewable energy projects. Green labels using the fund model can improve the business case of RE projects, by providing a one-off payment to compensate for a lack of profitability or they can provide operational support in a similar way as many public support instruments do. Labels using the supply model, could indirectly improve the business case of renewable energy projects by increasing the price of guarantees of origin for newer projects.

Figure 4-2 Overview of the factors affecting the business case of a typical renewable energy projects



Capital availability is often not a limiting factor for RE plants. Most renewable energy projects are financed via project finance, consisting of some equity (usually 10-25%) and debt (75-90%). The overall capital cost level will depend on the equity/debt ratio, as well as the perceived risk of the project which is reflected in the returns demanded by the investors. It should be noted that the decision on whether or not to invest in a renewable energy project depends on the risks and returns associated with that project, which are the key determinants of the business case.⁵⁷ A lack of capital is almost never a barrier; if the business case is solid, capital investments will likely follow. Therefore, interventions that affect the risks or returns of the RE project tend to impact the investment decisions most strongly. However, when looking at the existing labels, most activities of the labels do not directly increase RE project returns or reduce their risks.

Revenues from renewable energy projects - obtaining additional income from going green. Over the last decade, energy sales and public support have been the most important sources of income for renewable energy projects (with the contribution of public support decreasing due to the reduced investment costs - see table). Energy sales is becoming the most dominant source of income while GO sales make up only a very limited share

⁵⁷ *Forthcoming*: Trinomics (2020). Report on literature review and stakeholder interviews regarding the representation and implications of the financing challenge.

(though GO prices increased substantially in specific markets, where the supply is limited⁵⁸).

Table 4-1 Revenue components of renewable energy projects

Revenue component	Average RE project EU 2016	Recent RE projects in the Netherlands (projects approved in 2014-2016)
Electricity sales ⁵⁹ (EUR/MWh)	76.5	60 -55 (65% of total rev.)
Public support (EUR/MWh)	106 ⁶⁰	29-46 ⁶¹ (32-42% of total rev.)
GO sales (EUR/MWh)	<1	2.5-3 (PV and wind) ⁶² (3% of total rev.)

Some green labels can affect the scarcity of specific GO types (e.g. from plants from a certain geographical location and a maximum age), increasing their price (though to a limited extent). It should be noted though, that even when the demand for renewable energy starts to exceed the supply of GOs, the prices can only increase to a certain extent as this will depend on the willingness of consumers to pay for renewable energy, which will differ per Member State.

The share of renewable electricity available in the market is much larger than the volume covered by the labels. **There seems to be only very limited additional renewable energy consumption from new installations deriving from the use of energy labels**, even when assuming a positive effect of the applied additionality criteria. The impact of a given label depends on different aspects, including the extent to which the label is promoted, the level of consumer trust in the label, and the number of labels available in the region. These all are driving factors for the volume of labelled energy sold to final consumers, and therefore for the impact of the specifically applied criteria. There may be indirect impacts such as increased consumer awareness and ease of choice for consumers as mentioned in previous sections. Label organisations highlighted that they had a role driving the energy transition, along with other civil organisation initiatives, but that the **impact is hard to measure**. Examples were given from labels which led to increased RES consumption, e.g. while being used alongside regulation, to reduce companies' emissions or playing an advocacy role and providing guidelines that supported the launch of renewable contracts in countries such as Russia and China.

All but two of the labels assessed address additionality criteria in some way. More than two-thirds of the labels assessed (15 out of 23) apply a fund model while more than one-third (nine out of 23) apply a requirement on supply from 'additional' plants. When focusing specifically on new renewable

⁵⁸ For instance in the Dutch market, where the demand for *domestic* renewable energy is large, the prices for Dutch GOs increased to over 2.5 EUR/MWh in 2016, compared to 0.2 EUR/MWh for Scandinavian hydropower and 0.3 2.5 EUR/MWh for average European wind power. However, even in this special situation GO income only accounted for around 3% of the total revenues. Source: CE Delft (2016) Factsheet: ontwikkeling prijzen garanties van oorsprong.

⁵⁹ Eurostat (2020). Electricity prices components for non-household consumers - annual data

⁶⁰ Based on total public support in 2016 by renewable energy projects, divided by the total volume of energy produced by these projects - CEER (2018) Status Review of Renewable Support Schemes in Europe for 2016 and 2017.

⁶¹ For projects approved in 2014 or 2015, compensation depending on the technology and the year of approval - ECN (2017) Definitieve correctiebedragen 2016 (SDE+).

⁶² CE Delft (2016). Factsheet: ontwikkeling prijzen garanties van oorsprong.

installations, out of the 23 labels, 11 apply a fund model with a focus on supporting the construction and operation of renewable energy plants; while only five apply a requirement on supply from new or refurbished plants. However, **existing labels do not directly trigger the installation of additional renewable generation capacities** (beyond the limited amount driven by fund model investments). The direct investments from the fund models are very limited (due to limited market share), though label organisations have highlighted they have stimulated investments of several million Euros in renewable installations. Additionality criteria often focus on targeting energy generated by new capacities; however, these RES projects would often have been built regardless. One-off direct payments or operation support from a label fund towards projects that do not receive public support could lead to additional renewable energy deployment, but could reduce the cost efficiency of the energy transition and bears the risk of creating windfall profits for RE project developers. Next to direct impacts on additional RE deployment, the impact of labels can also be indirect, for example, through increased visibility of projects.

Investment volumes from green labels with fund models are very small. Based on a rough estimate using the labelled volumes, one could estimate a maximum of 100 million Euros raised per year for the different label funds. If it is assumed that these funds are only spent on renewable energy deployment, which is not the case,⁶³ and assuming that all investments are additional, this would mean that investments from such funds represent 0.2% of total renewable energy investments in the EU. Such investment volumes could lead to the deployment of 57 MW of onshore wind capacity or 100 MW of utility-scale PV, which is equivalent to only 1% of the annual net additional capacity installed in the EU27 in 2018. This is a very optimistic estimate as a large part of the label funds are not actually spent on European renewable energy projects. In the theoretical case that all electricity in the EU was labelled and applying a common labelling fee of 0.3cts/kWh, this would generate a financing volume of around €9 bn. Even though this would mean a significant contribution to renewable energy investments, this would not be sufficient to fully replace government driven support schemes for renewable electricity, which totalled €66.5 bn in 2016.

Next to label funds, additionality criteria can stimulate the consumption of RE from new plants. The most relevant criteria in this regard are the ‘new plants’ and the ‘initiation of plants’ criteria. The new plants criterion requires the energy to derive from plants with a certain maximum age and often this criterion is combined with the criterion requiring projects not to receive public support. Even though it promotes the procurement of GOs from new non-supported plants, it is not evident how this increases the profitability of such projects or how this would stimulate the development of new unsupported projects, especially in a context where public support schemes provide a sufficiently high level of reliable revenues.

A second possibility (‘initiation criterion’) is that green energy labels require energy suppliers to invest money in new RE projects to achieve a minimum level of new RE capacity/production volume, depending on the volume of labelled energy sold. However, given that the availability of profitable RE projects depends on the risk and returns profile and are little affected by the availability of additional capital, requiring labelled energy suppliers to invest in new RE projects is unlikely to lead to an increase in the overall deployment of new RE capacity. Nevertheless, it can be an important means to

⁶³ Many label funds spend their money on projects related to innovation, energy efficiency, sustainability, information campaigns and compensation schemes. Even when the funds are spent on renewable energy projects, these projects are not always located within the EU.

ensure consumers that part of the money they spend on their energy tariff is invested in new renewable energy capacity.

There is an increasing trend for companies to use PPAs (backed by GOs) due to more competitive prices as well as CSR policies. These PPAs could lead to direct additionality given the large cumulative volumes (when not coupled to public support). PPAs are also used by energy suppliers as a means to address the scepticism among consumers that GOs are only used for 'greenwashing' of non-renewable energy; PPAs can help suppliers to communicate to the consumers that the GOs and the procured energy are from the same (local) renewable energy producers. However, currently the impact of corporate PPAs in triggering the installation of new RES projects is limited as the corporate PPA market is still a niche market in the EU.

Labels have different ways to stimulate (other) environmental benefits, including funds and sustainability criteria. Based on a rough estimate, a maximum of 100 million Euros is being raised per year for the different label funds. The projects eligible for funding depend on the specific criteria of the labels analysed, but they tend to cover the construction and operation of renewable energy plants; efficiency measures; innovative projects and activities supporting the energy transition (going beyond renewable plants); activities to increase the sustainability of plants or the environmental status of related ecosystems (particularly affected water bodies); information campaigns related to renewables, the energy transition or broader topics; and compensation projects or emission certificates like verified emissions reductions (VERs), certified emission reductions (CERs) or EU emission allowances.

Labels also aim at making a difference by establishing criteria concerning the companies, though the level of strictness varies across labels. For example, some labels require an established corporate environmental policy encouraging sustainable generation and efficient use of energy, as well as having no relevant links to direct ownership and financial interests in fossil fuels- and nuclear power plants. Regarding sustainability related eligibility criteria, several were highlighted, including: exclusion of protected or ecologically sensitive areas; integration into the landscape, protection of sensitive biotopes and noise protection; maximum environmental impact value, e.g. based on ecological lifecycle assessment; general habitat quality, or exclusion of negative impacts on habitat quality; and self-monitoring with examination of (health and environmental) risks.

5 Suitability of the EU Ecolabel to be the Union wide green RES label

This chapter analyses whether the existing EU legal framework covering the EU Ecolabel Regulation⁶⁴ and the Directive 2014/24/EU⁶⁵ is suitable for an EU Ecolabel for RES.

In this chapter we provide answers to the following questions:

- Section 5.1: Does the scope of the EU Ecolabel Regulation cover a possible EU Ecolabel for RES?
- Section 5.2: What is the relevant product group for an EU Ecolabel for RES: energy in general or energy types?
- Section 5.3: Are the EU Ecolabel governance criteria applicable to an EU Ecolabel for RES?
- Section 5.4: What are the general rules for award criteria an EU Ecolabel for RES would have to comply with?
- Section 5.5: What is the EU Ecolabel governance structure to be followed when establishing an Union wide Ecolabel for RES?
- Section 5.6: When do award criteria for an EU Ecolabel for RES comply with the main public procurement principles (PPP)?

5.1 Scope of the EU Ecolabel

The EU Ecolabel applies “to any goods or services which are supplied for distribution, consumption or use on the Community market” (Art. 2(1) EU Ecolabel Regulation). Both goods and services are defined as “products” within the meaning of the EU Ecolabel Regulation by its Art. 2(1). Therefore, the question is whether energy and its generation constitute “goods” or “services” within the meaning of Article 2(1). The answer follows the traditional methods of interpretation in EU law, as developed and continuously applied by the Court of Justice of the European Union (CJEU)⁶⁶.

An assessment of the EU Ecolabel Regulation’s scope shows that it includes energy. This finding is based on a literal, contextual and teleological interpretation, which all show that the legislators’ general understanding of *goods* under EU primary as well as secondary law includes all forms of energy and has been used accordingly in other areas of EU legislation. Therefore, the EU Ecolabel can be used for RES from new installations.

5.2 Relevant Product Group for an EU Ecolabel for RES

In order to analyse the individual award criteria for an EU Ecolabel for RES it is important to first define the product group to be labelled and the relevant market. Following Art. 2 (1) EU Ecolabel Regulation the “community market” is the relevant market to define criteria with which products must comply in order to bear the EU Ecolabel.⁶⁷ Therefore, energy services and energy products, which are supplied for distribution, consumption or use on the community market can be labelled, in principle.

Any assessment on label criteria needs to first define the relevant product group as this is necessary when developing label criteria. Otherwise, the environmental impact cannot be properly analysed. If,

⁶⁴ Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel, 30 January 2010, OJ L 27/1.

⁶⁵ REF MISSING

⁶⁶ Cf. Lenaerts, K. and Gutiérrez-Fons, J. A. (2013). To Say What the Law of the EU Is: Methods of Interpretation and the European Court of Justice, EUI Working Paper AEL2013/9, available at https://cadmus.eui.eu/bitstream/handle/1814/28339/AEL_2013_09_DL.pdf?sequence=1&isAllowed=y (last accessed 13 February 2020).

⁶⁷ Cf. Recital (5) EU Ecolabel Regulation.

for example, the product group is ‘energy in general’, the assessment of a product’s relative environmental performance would greatly differ from that of a ‘RES’ product group. Additionally, the necessity to define a product group follows the non-discrimination rules of the WTO (incorporated in the WTO Agreement on Technical Barriers to Trade - TBT⁶⁸, too), which regulates that ‘like’ products must be treated alike.⁶⁹

The EU Ecolabel Regulation leaves a wide margin of discretion in defining a product group as long as the scope of Art. 2 (2) EU Ecolabel Regulation is obeyed and the conditions of Art. 3 (1) EU Ecolabel Regulation are met. Art. 2 (2) EU Ecolabel Regulation excludes medicinal products for human and veterinary use and any type of medical device from the scope. However, goods and services related to energy production and consumption are not excluded from an EU Ecolabel according to Art 2. (2). Art. 3 (1) requires that a product group must be:

“a set of products that serve similar purposes and are similar in terms of use, or have similar functional properties, and are similar in terms of consumer perception”.

The definition has two main criteria for defining a product group, which must be met cumulatively, namely “similar purpose/use of the product” (“principle of functional equivalence”) and “similar consumer perception”:

5.2.1 Similar purpose/use

To analyse the product group according to its purpose and use “energy in general” can serve as a basic starting point. “Energy” defined according to physics is a “conserved quantity” “that must be transferred to an object in order to perform work on, or to heat, the object”. There are several forms of energy, for example mechanical, electric, magnetic, which have and serve different functional purposes: e.g. to heat or cool a building, to run machines or electronic devices or to exert magnetic power. However, looking at the aim of the RED II Directive which is to promote the use of energy from renewable sources (cf. Art. 1 RED II) such a broad understanding of the relevant product group faces practicable label problems and is not appropriate to support the aim of RED II.

Consequently, a narrower understanding of “energy in general” according to primary energy source should be used to define the product group, i.e. to cover “energy from renewable sources” (RES) / “renewable energy” and “energy from conventional sources” (e.g. coal, natural gas). When defining RES the following definition in Art. 2 (1) RED II could be used: *“‘energy from renewable sources’ or ‘renewable energy’ means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas”.*

Even a narrower understanding of energy as described before faces the problem that different energy types (electricity, gas, cooling & heating) have different functional properties and thus cannot be in the same product group. As a consequence, the different energy types should form separate product groups for which separate labels and criteria according to the EU Ecolabel Regulation should be developed. Finally, when looking at the purpose/use of different energy types there is no functional difference between, e.g. electricity from RES and electricity from conventional sources and similarly for gas from

⁶⁸ The TBT Agreement: http://www.wto.org/english/docs_e/legal_e/17-tbt.pdf

⁶⁹ Article I GATT (the most favoured nation clause) and Article III GATT (the national treatment clause) constitute the WTO’s principle of non-discrimination which is reflected in the concept of ‘like products’.

RES and from conventional sources. Therefore, according to functional equivalence a product group “RES” that excludes energy types from conventional sources is not possible, irrespective of the consumer perception. Rather there should be three different EU Ecolabel for the following product groups:

- “electricity”;
- “gas for energy use”; and
- “heating & cooling”.

5.2.2 Similar consumer perception

The second criterion for a product group in Art. 3 (1) EU Ecolabel Regulation requires that the respective products “are similar in terms of consumer perception”. As proposed above, each product group for the three EU Ecolabels for RES “electricity”, “gas for energy use” and “heating & cooling” should comprise energy from conventional sources and energy from RES.

Consumers of energy in the EU will be, in general, aware about the impact on climate change that energy from conventional sources in contrast to energy from RES has. Nevertheless, for ‘household consumers’ the energy market and the different types of energy technologies and sources are complex issues that are difficult to understand regarding, for example, the transparency on the energy price or the environmental impact of the electricity products.⁷⁰ From a consumer’s point of view, electricity for example as a consumed product is a standard good irrespective of its way of production. One - temporary - reason for an incomplete knowledge on the fuel mix is that some Member States have not yet implemented the minimum requirements on fuel mix disclosure as regulated in Art. 3(9) of the Internal Electricity Market Directive 2009/72/EC⁷¹. Thus, consumers may not know their energy’s origin.⁷²

Consumers will find it even more difficult to distinguish between heating & cooling from conventional sources and from RES (respectively for “gas for energy use”) due to missing functioning environmental labels for gas and heating & cooling, so far.

In the end, from a consumer perception “electricity” as well as “gas for energy use” and “heating & cooling” from conventional sources are similar to those from RES. Therefore, it seems more convincing to consider the targeted energy types in general as the relevant product group. This corresponds to the EU Ecolabel scheme’s aim to label the most general product group.

Following the requirements in Art. 3 (1) “similar purpose/use” and “similar consumer perception” we recommend three different EU Ecolabel for RES for the following product groups:

- “electricity”;
- “gas for energy use”; and
- “heating & cooling”.

5.3 EU Ecolabel with different levels of ambition (basic standard, premium standard)?

⁷⁰ EU Commission (2016). Second consumer market study on the functioning of the retail electricity markets for consumers in the EU.

⁷¹ Cf. Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, OJ L 211, 14.08.2009, p. 55.

⁷² BEUC (2017). Energy markets of the Future: How the EU’s Energy transition should work for consumers. BEUC policy paper.

The EU Ecolabel is a multi-product and multi-criteria ecolabel⁷³ that is based on a number of criteria that a product has to comply with in order to meet the standard of the label. Due to its multi-product and multi-criteria approach, the EU Ecolabel scheme can be applied for different product or service groups, with a different set of criteria established for each (cf. Art. 6, Art. 8, Annex I Ecolabel Regulation). These criteria normally define the environmental performance that the product must reach and may also set standards. The general approach is that the label applicant has to meet all criteria, but that there is no differentiation as to the level of compliance with these criteria. For certain product groups, a “point-based system” has been applied. In such a system, the label is awarded not only if all criteria are met, but if the product accumulates a total number of points above a pre-set threshold.⁷⁴

However, the EU Ecolabel Regulation does not foresee different levels of ambition such as a basic and a premium RES Ecolabel (or any other form of grading⁷⁵). Rather, it aims to promote products with a high level of environmental performance (i.e. the top 10-20 %) in a product or service group. Within such a product or service group, neither the label itself nor the criteria for its use, allow for different “sub-groups”. The text of the EU Ecolabel Regulation does not explicitly state that such an option exists. Another formal argument against such an approach under the EU Ecolabel scheme is that its form is specifically regulated by Art. 9(2), Annex II of the EU Ecolabel Regulation. There, the scheme only allows for the use of one specific label and also regulates the allowed use of colours (either in colour or black/white)⁷⁶. Any differentiation regarding the levels of ambition (e.g. by different colours, slightly different labels or additional information) is not allowed and would contradict this approach. Even the text that can be used in the optional text box is specified for the whole product group and cannot be adapted according to the characteristics of the specific product (Art. 8(3)(b) EU Ecolabel Regulation).

As the EU Ecolabel scheme aims to help consumers make a clear and informed choice arguably, one label with different standards would contradict this goal. Also, the EU Ecolabel already aims at only “promoting the most environmentally friendly products” (the aforementioned top 10-20 %). It would contradict this aim if it were to allow for a “basic standard”. On the other hand, a premium standard that aims at much less than 10 % is not possible under the EU Ecolabel Regulation, but it could also contradict its aim of providing consumers with “sufficient choice”. In any case, an EU Ecolabel with different levels of ambition would need to explicitly change the EU Ecolabel’s form in order to allow for this differentiation.⁷⁷

5.4 Material Requirements for Award Criteria according to EU Ecolabel Regulation

⁷³ I.e. it is applicable to any number of product categories that fit its scope and it not only assesses one specific criterion, but the general environmental impact (based on the relevant criteria). Cf. Iraldo/Griesshammer/Kahlenborn (2020), “The future of ecolabels”, *The International Journal of Life Cycle Assessment* 25, p.833 (834).

⁷⁴ These options (including the possibility of combining them) are e.g. discussed in European Commission, Joint Research Centre, Development of EU Ecolabel criteria for Retail Financial Products: (Draft) Technical Report v1.0: Draft criteria proposal for the product scope and ecological criteria (March 2019).

⁷⁵ So-called gradation, graded label or multi-tier label. Cf. Fischer and Lyon (2013), “A Theory of Multi-Tier Ecolabels”.

⁷⁶ “[T]wo colours (Pantone 347 green for the leaves and stem of the flower, the ‘E’ symbol, the web address and the EU acronym and Pantone 279 for all other elements, text and borders), or in black on white, or in white on black”, Annex II EU Ecolabel Regulation.

⁷⁷ Cf. the EU Energy label on energy efficiency that foresees different classes and regulates the labels form accordingly. See e.g. for refrigerators: Art. 3(1)(a), Annex III of Commission Delegated Regulation (EU) 2019/2016 of 11 March 2019 supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of refrigerating appliances and repealing Commission Delegated Regulation (EU) No 1060/2010, OJ L 315/102.

This section explains the material requirements an EU Ecolabel for RES would have to comply with. According to Art. 6 EU Ecolabel Regulation the following general criteria are essential:

Criteria shall be **based on environmental performance of products** (cf. Art. 6(1) EU Ecolabel Regulation). Thus, criteria shall not address the environmental performance of the producing company in general or other factors not related to the product. Therefore, criteria of (national and regional) ecolabels addressing the general environmental performance of the electricity, gas or heat supplier, e.g. regarding the ecological and ethical orientation and the resulting actions of the electricity suppliers, are not in line with Art. 6 (1) EU Ecolabel Regulation.⁷⁸ As the Task 1 (see chapter 3) of this project has revealed, company-specific criteria are applied by many labels. For example, some labels may only be used by companies that do not hold shares in nuclear power or (newer) coal-fired power plants.⁷⁹ In general, the fact that an energy supplier holds shares of other companies - irrespective of the "type" of company - is not related to the product to be certified according to the EU Ecolabel Regulation. A distinction must be made from the case of a supplier who not only holds shares but supplies energy from nuclear power or (newer) coal/oil-fired power plants. In this case the energy supplied is certainly related to the product to be certified, i.e. an EU Ecolabel for RES can exclude other forms of energy source like coal or nuclear power to be part of the labelled product. However, a possible way to exclude suppliers from an EU Ecolabel who, for example, trade electricity from nuclear power or from fossil sources could be a restricted definition of the license holder. The Austrian Green Electricity label has chosen this approach in defining within the product group the "Eco-electricity provider" to be: *"Only electricity providers that neither trade in nuclear power or electricity from fossil sources nor supply or sell electricity of unknown origin using guarantees of origin separately obtained can become Ecolabel licensees."*⁸⁰

The **latest strategic objectives of the EU in the field of the environment** must be taken into account when developing award criteria (cf. Art. 6(1) EU Ecolabel Regulation):⁸¹

- For an EU Ecolabel for RES these are at least the objectives in Art. 1 RED II which are to promote the production of energy from renewable sources by setting a binding overall target of at least 32% bis 2030 (Art. 3 RED II). To achieve this aim the directive establishes a *"enabling framework comprising the enhanced use of Union funds", including additional funds to facilitate a just transition of carbon intensive regions towards increased shares of renewable energy*" (Art. 3(5) RED II)⁸²;
- In the Wienstrom case the ECJ stresses that the promotion of RES-E is a high Community priority inter alia for the reason of environmental protection (cf. Recital 2 of Directive 2001/77⁸³). The Court argues that a purpose of Directive 2001/77 is to promote an increase in the contribution of renewable energy sources to electricity production in the internal market

⁷⁸ Cf. ECJ ruling in the MAX HAVELAAR Case, Rs. C-368/10, 10.05.2012, 90.

⁷⁹ Umweltbundesamt (UBA) (2019). Marktanalyse Ökostrom II: Marktanalyse Ökostrom und HKN, Weiterentwicklung des Herkunftsnachweissystems und der Stromkennzeichnung (Climate Change No. 29/2019), p. 107.

⁸⁰ Cf. No 1 (Definition of the product group) in the Austrian Ecolabel Guideline, UZ 46 "Green Electricity", Version 5.0 as of 1 January 2018, available at: https://www.umweltzeichen.at/file/Guideline/UZ%2046/Long/Uz46_R5.0a_Guideline_Green_Electricity_2018.pdf (as from 23.6.2020).

⁸¹ No 2 Annex I EU Ecolabel Regulation states "they shall take into account relevant Community policies and work done on other related product groups."

⁸² Cf. Recital 12: "In order to support Member States' ambitious contributions to the Union target, a financial framework aiming to facilitate investments in renewable energy projects in those Member States should be established, including through the use of financial instruments."

⁸³ Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market, OJ L 283, 27.10.2001, p. 33-40. Entered into force: 31.12.2011.

for electricity and to create a basis for a future Community framework thereof (cf. Recital 18 and Articles 1 and 3 of the Directive). To that end, Article 3(1) of the directive requires Member States to take appropriate steps to encourage greater consumption of electricity produced from renewable energy sources in conformity with the national indicative targets referred to in Article 3(2) of the directive. Although Directive 2001/77 has been repealed by Directive 2009/28/EC⁸⁴ the scope of Directive 2009/28/EC has not changed with respect to the ECJ's argumentation, i.e. to establish "a common framework for the promotion of energy from renewable sources" (cf. Article 1 Directive 2009/28/EC). Moreover, Member States are still required to "introduce measures effectively designed to ensure that the share of energy from renewable sources equals or exceeds" its national targets (cf. Article 3(2) Directive 2009/28/EC).

Ecolabel criteria shall be determined on a scientific basis and the whole life cycle of products shall be taken into account meeting the aspects in Art. 6(3) lit. a) to g) EU Ecolabel Regulation. Criteria shall be "based on *the most significant environmental impacts of the product, be expressed as far as reasonably possible via technical key environmental performance indicators of the product, and be suitable for assessment according to the rules of this Regulation.*"⁸⁵ When defining criteria for an EU Ecolabel for RES significant environmental impacts during the life-cycle of producing and distributing energy and heat must be considered. Following Art. 6(3) lit. a) the impact on climate change, the impact on nature and biodiversity, energy and resource consumption and emissions to environmental media must be considered when setting up criteria for an EU Ecolabel for RES (cf. Art. 6(3) lit. a) EU Ecolabel Regulation.⁸⁶ As stated in No. 2 Annex I EU Ecolabel Regulation the environmental performance of the award criteria shall consider "where appropriate, social and ethical aspects", i.e. criteria that do not relate to the production phase of the product (so-called process and production methods (PPM)). The development of criteria for an EU Ecolabel for RES shall be in line with existing national or regional labels in order to improve synergies between those labels and an EU Ecolabel, see Art. 6(3) lit. g) EU Ecolabel Regulation:

"criteria established for other environmental labels, particularly officially recognised, nationally or regionally, EN ISO 14024 type I environmental labels, where they exist for that product group so as to enhance synergies."

Art. 6(3) lit. b) to e) EU Ecolabel Regulation states further criteria which do not seem relevant for an EU Ecolabel for RES, because they relate to issues such as health and social issues for products which do not appear to be applicable to the generation of electricity or heat.⁸⁷

5.5 The EU Ecolabel governance requirements

⁸⁴ Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC, OJ L 140, 5.6.2009, p. 16-62.

⁸⁵ Cf. No 2 Annex I EU Ecolabel Regulation.

⁸⁶ Art. 6(3) lit. a) EU Ecolabel Regulation states "most significant environmental impacts, in particular the impact on climate change, the impact on nature and biodiversity, energy and resource consumption, generation of waste, emissions to all environmental media, pollution through physical effects use and release of hazardous substances;"

⁸⁷ "(b) the substitution of hazardous substances by safer substances, as such or via the use of alternative materials or designs, wherever it is technically feasible.

(c) the potential to reduce environmental impacts due to durability and reusability of products.

(d) the net environmental balance between the environmental benefits and burdens, including health and safety aspects, at the various life stages of the products.

(e) where appropriate, social and ethical aspects, e.g. by making reference to related international conventions and agreements such as relevant ILO standards and codes of conduct."

In this section the governance structure of the EU Ecolabel Regulation is explained in detail being the legal basis for the development and assessment of options for establishing a Union wide green label(cf. section 6):

Following Art. 4(1) EU Ecolabel Regulation, Member States must designate a “competent body” which must comply with requirements regarding their independence and neutrality to ensure transparency (cf. Art. 4(2) EU Ecolabel Regulation) stated in Annex V “Requirements relating to the competent bodies”. Art. 5(1) provides that the Commission has to establish a European Union Ecolabel Board (EUEB) to review the implementation of the EU Ecolabel schemes. Furthermore, the regulation contains general requirements for EU Ecolabel criteria (cf. Art. 6), their development & revision, their establishment and for the awarding process as well as the conditions of their use (cf. Art. 7 to 10).

The EU Ecolabel Regulation aims to establish an effective regime in order to “*promote those products which have a high level of environmental performance*” and to provide consumers with relevant information.⁸⁸ To this end, the EU Ecolabel Regulation sets up a scheme that ensures its effective and coherent application, while at the same time making sure that all interested parties are included in the development of criteria.⁸⁹ As a result, four main groups (institutions/bodies/stakeholders) exist under the governance structure with the following responsibilities and roles:

- The **EU Ecolabelling Board (EUEB)**⁹⁰ is the **advisory body** of the Ecolabel Scheme (cf. Art. 5 EU Ecolabel Regulation). Its establishment is additionally governed by a Commission Decision.⁹¹ The EUEB is composed of (1) the representatives of the Competent Bodies of the European Union⁹², (2) the representatives of the European Economic Area⁹³ and (3) “other interested parties” (Art. 5(1) EU Ecolabel Regulation). Here, “*a balanced participation of all relevant interested parties in respect of each product group*” shall be ensured (Art. 5(2) EU Ecolabel Regulation). The membership of the EUEB has been recently modified to include representatives of the financial sectors and other interested stakeholders willing to engage proactively in the EU Ecolabel.⁹⁴ At the moment, the EUEB does not include a stakeholder from the RES-sector. Similar to the recent modifications in the financial sector, the Commission could decide to extend membership in this regard. At the same time, stakeholders in this area can still participate in the criteria development process through the respective Ad Hoc Working

⁸⁸ Consumer awareness and acceptance have been described as vital for the effectiveness of an ecolabel, cf. Castka, P. and Corbett, C. (2015). “Governance of Eco-Labels: Expert Opinion and Media Coverage”, Journal of Business Ethics.

⁸⁹ Consumer awareness and information, together with incentives for companies for the development and distribution of environmentally friendly products are the two main objectives behind any ecolabel, cf. Iraldo, F., Griesshammer, R. and Kahlenborn, W. (2020). “The future of ecolabels”, The International Journal of Life Cycle Assessment, 833, 834.

⁹⁰ Consists of representatives from the national competent bodies (i.e. from the EEA member states), 14 stakeholder organisations, and 3 additional bodies (ECHA, EIB, ILO); the complete list is available at <https://ec.europa.eu/environment/ecolabel/who-does-what.html>.

⁹¹ Commission Decision 2010/709/EU of 22 November 2010 establishing the European Union Ecolabelling Board, OJ L 308/53, 24.11.2010.

⁹² I.e. the Competent Bodies according to Art. 4 EU Ecolabel Regulation, see bullet point below.

⁹³ Art. 2(2) Commission Decision 2010/709/EU. This means representatives from Iceland, Liechtenstein and Norway.

⁹⁴ According to the EU Ecolabel’s website, see <https://ec.europa.eu/environment/ecolabel/who-does-what.html> (last accessed 6 July 2020): The European Consumer Organisation (BEUC), European Environmental Bureau (EEB), EuroCommerce, Eurochambres, European Business Services Alliance, Collaborating Centre on Sustainable Consumption and Production (CSCP), Plastic Recyclers Europe, European Chemical Industry Council (CEFIC), World Wide Fund for Nature (WWF), Better Finance - the European Federation of Investors and Financial Services Users, European Fund and Asset Management Association (EFAMA), European Savings and Retail Banking Group (ESBG), Insurance Europe, European Banking Federation (EBF), and the following EU/UN Bodies : the European Chemical Agency (ECHA), the European Investment Bank (EIB) and the International Labour Organisation (ILO).

Group. These are formed for every criteria revision/development process, to involve all interested stakeholders.⁹⁵

The EUEB advises and assists the European Commission in the development and revision of EU Ecolabel criteria⁹⁶ and on the review of the implementation of the EU Ecolabel scheme (Art. 5(1) EU Ecolabel Regulation). It is also responsible for issuing recommendations on minimum environmental performance requirements (Art. 5(2) EU Ecolabel Regulation). These tasks are reiterated in the EUEB's Rules of Procedure.⁹⁷

The EU Ecolabel Regulatory Committee, composed by EU Member States representatives, delivers its opinion on the Commission Decisions that establish/revise EU Ecolabel criteria (cf. Art. 8(1) and Art. 16 of the EU Ecolabel Regulation). Member States can designate their best-placed representatives to vote on each set of criteria;

- **National Competent Bodies (NCB)** (cf. Art. 4 EU Ecolabel Regulation): The NCBs are independent and impartial organisations designated by each Member State⁹⁸. It is up to the respective Member State's discretion whether they establish their NCB within government ministries or outside. Equally, they can opt for more than one competent body, as long as the respective powers and the necessary coordination between these bodies are clearly determined. Annex V of the EU Ecolabel Regulation foresees additional requirements for NCBs. The overall purpose of NCBs is the implementation of the EU Ecolabel scheme at national level. Therefore, their main task is to "ensure that the verification process is carried out in a consistent, neutral and reliable manner" (Art. 4(4) EU Ecolabel Regulation). Accordingly, applications for the award of the EU Ecolabel are handled by the NCBs (cf. Art. 9(1) EU Ecolabel Regulation) as well as verification that products awarded with the EU Ecolabel continue to comply with the criteria (Art. 10(2) EU Ecolabel Regulation). This makes the NCBs the main point of contact for applicants as well as licence holders and the main body of the actual award process. The licence holder itself is responsible for ensuring continued compliance with the criteria and documentation of it, where necessary. Additionally, the NCB may carry out inspections or test the product (cf. Art. 10(3) EU Ecolabel Regulation);
- The **European Commission's** main role is in the development or revision and adoption of criteria. It is responsible for the final proposal, but only after consultation with the EUEB and following a decision in the EU Ecolabel Regulatory Committee.

The development and revision of EU Ecolabel criteria (which would apply to an EU Ecolabel for RES, too) follows the procedure laid down in Art. 7 EU Ecolabel Regulation, together with Annex I Part A of the EU Ecolabel Regulation. It usually takes about 2 years.⁹⁹ Once EU Ecolabel criteria for RES have been published by the EU Commission, applicants can apply for the label at their National Competent Bodies (NCB). It is the NCB that ensures that the verification process for the EU Ecolabel is carried out in a consistent, neutral and reliable manner (Art. 4(4) EU Ecolabel Regulation). The NCB has to meet the requirements listed in Annex V EU Ecolabel Regulation (cf. Art. 4(3) EU Ecolabel Regulation):

⁹⁵ Evans, L., Nuttall, C., Gandy, S., Iraldo, F., Barberio, M., Paglialonga, A., Gasbarro, F. Nucci, B. (2015). Project to support the evaluation of the Implementation of the EU Ecolabel Regulation: Synthesis Report (study for the European Commission, Directorate-General for Environment), p. 5.

⁹⁶ The procedure for the development and revision of criteria can be found in Annex I to the EU Ecolabel Regulation.

⁹⁷ European Union Ecolabelling Board - Rules of Procedure, Version of 11 June 2020

(https://ec.europa.eu/environment/ecolabel/about_ecolabel/pdf/EUEB_rules_procedure.pdf).

⁹⁸ I.e. the EU Member States and the three additional EEA members.

⁹⁹ According to information published by the Commission on the EU Ecolabel website, see <https://ec.europa.eu/environment/ecolabel/criteria-development-and-revision.html>.

As a central requirement Competent Bodies shall be independent of the organisation or the product it assesses (No. 1 Annex V EU Ecolabel Regulation). This means that the NCB, its top-level management and the personnel responsible for carrying out the conformity assessment tasks¹⁰⁰:

- shall not be the designer, manufacturer, supplier, installer, purchaser, owner, user or maintainer of the products which they assess, nor the authorised representative of any of those parties;
- Nor shall they be directly involved in the design, manufacture or construction, the marketing, installation, use or maintenance of those products, or represent the parties engaged in those activities. They shall not engage in any activity that may conflict with their independence of judgment or integrity in relation to conformity assessment activities for which they are designated. This shall in particular apply to consultancy services.

5.6 EU Ecolabel requirements for RES and their compliance with main principles in the Public Procurement Directives

In principle, award criteria for an EU Ecolabel for electricity (as well as labels for “gas for energy use” or for “heating & cooling from RES”) can be used in public procurement, for example as technical specifications, contract award criteria or contract performance clauses (cf. Articles 42, 67 and 70 Directive 2014/24/EU). Furthermore, an EU Ecolabel for RES labels can be used as a means of proof (cf. Art. 43 Directive 2014/24/EU) that the Label (governance and criteria) comply with public procurement rules. However, to use award criteria for an EU Ecolabel in GPP the award criteria must comply with the public procurement principles of equal treatment and non-discrimination (cf. Art. 18; Art. 42 (2); Art. 67 (4) of Directive 2014/24/EU), mutual recognition, proportionality and transparency.

5.6.1 Award Criteria and discrimination between tenderers

If public authorities use award criteria from an EU Ecolabel for RES as technical specifications or contract award criteria in GPP they must ensure the possibility of effective competition and exclude discrimination between tenderers (cf. Art. 67(4) Directive 2014/24/EU). For example, to limit the public procurement to RES coming from new installations could potentially discriminate against operators of old installations by excluding them from the public procurement. To be compliant with the public procurement rules it is necessary to use criteria for an EU Ecolabel for RES that treat economic

¹⁰⁰ - No. 3 Annex V EU Ecolabel Regulation requires that “Competent bodies and their personnel shall carry out the conformity assessment activities with the highest degree of professional integrity and the requisite technical competence in the specific field and shall be free from all pressures and inducements, particularly financial, which might influence their judgment or the results of their conformity assessment activities, especially as regards persons or groups of persons with an interest in the results of those activities.”

- No. 4 Annex V EU Ecolabel Regulation states that competent bodies shall “have the means necessary to perform the technical and administrative tasks connected with the conformity assessment activities in an appropriate manner [...]”. Thus, for each conformity assessment procedure and each kind of product category competent the bodies that are designated must be capable of/possess: “a) technical knowledge and sufficient and appropriate experience to perform the conformity assessment tasks; (b) descriptions of procedures in accordance with which conformity assessment is carried out, ensuring the transparency and the ability of reproduction of those procedures. It shall have appropriate policies and procedures in place that distinguish between tasks it carries out as a competent body and other activities; c) procedures for the performance of activities which take due account of the size of an undertaking, the sector in which it operates, its structure, the degree of complexity of the product technology in question and the mass or serial nature of the production process.”

- Annex V EU Ecolabel Regulation also lists criteria regarding the necessary competence of the personnel responsible for carrying out conformity assessment activities (cf. No. 5): “a) sound knowledge covering all the conformity assessment activities in relation to which the competent body has been designated; (b) the ability to draw up certificates, records and reports demonstrating that assessments have been carried out.”

- No. 3 Annex V EU Ecolabel Regulation requires that “Competent bodies and their personnel shall carry out the conformity assessment activities with the highest degree of professional integrity and the requisite technical competence in the specific field and shall be free from all pressures and inducements, particularly financial, which might influence their judgment or the results of their conformity assessment activities, especially as regards persons or groups of persons with an interest in the results of those activities.”

operators equally and without discrimination as well not artificially narrowing down competition by unduly favouring or disadvantaging certain economic operators (cf. Art. 18 Directive 2014/24/EU). Hence, if only new RES installations, that are less than x years old (age-criterion) were eligible this might be an unjustifiable discrimination against all other installations. Such a justification needs to be examined in detail. In this case a large group of tenderers (installations older than x years) could be excluded from the tendering process. Furthermore, RES installations could be eligible for a public contract only once or never, because they might be too old to participate in the next public procurement process.

However, the age-criterion's environmental reasoning could justify discrimination between tenderers. In 2002, in the "Concordia Bus" judgment¹⁰¹, the ECJ ruled on the compatibility of environmental criteria with the principle of non-discrimination. The Court had to clarify the question of whether criteria (the purpose of which was to reduce nitrogen oxide and noise emissions from the buses) could be laid down in the invitation to tender, in which it was clear from the outset that only a few bidding companies would be able to meet. The ECJ did not see this as a violation of the principle of equal treatment. In a second ruling, the "Wienstrom"-case¹⁰² the ECJ dealt with the admissibility of award criteria which required that the electricity to be procured be of renewable energy origin. The court ruled that the procurement authorities may also demand certain production processes if these contribute to characterising the product, regardless of whether the characteristics are visible or invisible. Thus, "conventional electricity" differs from "electricity from renewable energy sources" only in the way it is produced. In the same way, the age-criterion could be an invisible characteristic of RES-E that might not discriminate against tenderers who supply electricity from "older" installations. This requires that the age of an installation is linked to the subject matter "purchased electricity" (see infra).

5.6.2 "Link to the subject matter"

To use environmental criteria like "RES-coming from new installations", "additionality", or "sustainability" in an EU Ecolabel for RES refers to the specific process or method of production of the energy type. As such the criteria must be "linked to the subject-matter" of the contract and be proportionate to its value and its objectives (cf. Art. 42 (2), Art. 67 (3) Directive 2014/24/EU). A criterion is "linked to the subject matter" according to Art. 67 (3), for example, if it relates

"to the works, supplies or services to be provided under that contract in any respect and at any stage of their life cycle, including factors involved in:
(a) the specific process of production, provision or trading of those works, supplies or services; or
(b) a specific process for another stage of their life cycle,
even where such factors do not form part of their material substance."

To define what constitutes a "link to the subject matter", the following criteria have been used by the ECJ:

- In the Wienstrom case the ECJ ruled that *"an award criterion that relates solely to the amount of electricity produced from renewable sources in excess of the expected consumption"* of the contracting authority was inadmissible, as it was not linked to the subject matter of the contract. It also ruled that a criterion which gives those tenderers an advantage

¹⁰¹ ECJ Rs. C-513/99, 17.09.2002, „Concordia Bus“.

¹⁰² ECJ Rs. C-448/01, 04.12.2003, „Wienstrom“.

who possess larger production or supply capacities than others results in an unjustified discrimination against other tenderers;¹⁰³

- The ECJ emphasises that the contracting authority has a wide margin of discretion (cf. Art. 67(4) Directive 2014/24/EU) *“to choose the criteria on which it proposes to base the award of contract, provided that the purpose of those criteria is to identify the most economically advantageous tender and that they do not confer on the contracting authority an unrestricted freedom of choice as regards the award of the contract to a tenderer.”*¹⁰⁴ Against that background it is the contracting authority that has the power to establish and describe a link to the subject matter;
- In the Max Havelaar case the Court confirmed a link to the subject matter if the award criterion *“depends on the object of the contract since they must allow the level of performance offered by each tender to be assessed in the light of the object of the contract, as defined in the technical specifications, and the value for money of each tender to be measured”, the “most economically advantageous tender” being [that] which ... offers the best value for money”*;¹⁰⁵
- An award criterion that establishes a quantitative connection to the amount of RES-E or relates in other ways to the features of a subject matter constitutes a link to the subject matter.¹⁰⁶ Such a quantitative connection can for example be established with the requirement that a certain percentage of the purchased electricity has been produced from RES. In the Wienstrom case the ECJ has accepted a quite wide interpretation of what constitutes a link to the subject matter. The ECJ accepted the use of public procurement to increase the share of renewables to reach the EU renewables goals (not just buying electricity from existing RES-E capacities). This was acceptable for the Court even though the procured electricity delivered to the end consumer is not actually green in physical terms but comes from the general grid. According to the ECJ it is sufficient that the tender would aim at increasing the additional generation of electricity somewhere in the grid. Moreover, the court even says that the procurer does not have to ensure that this objective is actually met;¹⁰⁷
- The award criterion promotes an increase in the contribution of renewable energy sources to electricity production in the internal market for electricity. For example, the ECJ stresses that the promotion of RES-E is a high Community priority;¹⁰⁸
- Resulting from the principle of equal treatment of tenderers the contracting authority must be able to verify effectively whether the tenders submitted meet the award criteria (Art. 67(4) Directive 2014/24/EU).

¹⁰³ ECJ Rs. C-448/01, 50.

¹⁰⁴ ECJ Rs. C-448/01, 37.

¹⁰⁵ ECJ, RS C-368/10, 10.05.2012, „MAX HAVELAAR“, 86.

¹⁰⁶ Ortlieb (2013), Vergaberechtliche Aspekte bei der Beschaffung von Ökostrom. Berlin. p. 32.

¹⁰⁷ Cf. ECJ Rs. C-448/01, 4.12.2003, „Wienstrom“, 53: “As regards the Bundesvergabeamt’s question as to whether the award criterion at issue in the main proceedings infringes Community law in so far as it is not necessarily capable of helping to increase the amount of electricity produced from renewable energy sources, it need only be noted that even if that is in fact the case, such a criterion cannot be regarded as incompatible with the Community provisions in the field of public procurement simply because it does not necessarily serve to achieve the objective pursued.”

¹⁰⁸ Cf. ECJ Rs. C-448/01, 41.

5.6.3 Labels as means of proof in public procurement

Any design of an EU Ecolabel for RES that should be used as a means of proof that the Energy purchased corresponds to the required characteristics set out as e.g. award criteria must comply with the conditions for labels.¹⁰⁹

It is important to note that once a label meets these requirements, it allows for a flexible use during the tender process.¹¹⁰ Both the whole label as well as its individual requirements can serve as means of proof (cf. Art. 43 (1) subpara. 2 and (2) of Directive 2014/24/EU). On the one hand, the procurer can refer to the whole label if it is a suitable proof in its entirety. This is only the case where the award criteria or technical specifications which are to be used in the tender fully correspond to the label's criteria. On the other hand, it is also possible to use a label only as means of proof for a specific criterion or specification in the tender. In this case, only the label's criterion that corresponds specifically to the tender's criterion or specification is used. Therefore, even if a label provides no link to the subject matter, other criteria from that label can be used (see Art. 43 (2) of Directive 2014/24/EU). These specific criteria need to correspond to the tender's technical specifications or award criteria and have the necessary link to the subject matter.

The flexibility in using labels during the tender process requires careful consideration in each case as to which criteria can be used and whether the link to the subject matter exists. At the same time, it allows procurers to specify the requested product according to their needs and wishes. If these overlap with existing labels only to some extent, they are free to make use of the label insofar as the above discussed criteria are met. Beyond this, procurers may require additional criteria and allow for their proof independently from existing criteria.

5.7 Preliminary Conclusion

Section 5 has laid the groundwork for the legal assessment of the individual award criteria, as they are described in the next section 6. As such, we have examined the legal requirements for products, possible award criteria and the assessment of environmental excellence under the EU Ecolabel scheme. The compatibility of these (possible) requirements with public procurement principles has also been examined. This leads to the following preliminary findings:

The EU Ecolabel Regulation's scope includes energy. Thus, an EU Ecolabel for RES from new installations is possible in principle.

When developing an EU Ecolabel for RES we recommend three different EU Ecolabels for the following product groups and consequently three sets of criteria:

- "electricity";

¹⁰⁹ Conditions for labels stated in Art. 43 (1) lit. a to f Directive 2014/24/EU are:

- the label requirements only concern criteria which are linked to the subject-matter of the contract and are appropriate to define characteristics of the works, supplies or services that are the subject-matter of the contract;
- the label requirements are based on objectively verifiable and non-discriminatory criteria;
- the labels are established in an open and transparent procedure in which all relevant stakeholders, including government bodies, consumers, social partners, manufacturers, distributors and non-governmental organisations, may participate;
- the labels are accessible to all interested parties;
- the label requirements are set by a third party over which the economic operator applying for the label cannot exercise a decisive influence.

¹¹⁰ Cf. on the leeway for procurers in using labels as means of proof A. Hermann (2019), "Rechtsgutachten umweltfreundliche öffentliche Beschaffung Aktualisierung Februar 2019", UBA-Texte 30/2019, p. 75.

- “gas for energy use”; and
- “heating & cooling”.

Within these product groups, some criteria are more difficult to assess than others. More difficult criteria are those that are not directly related to the product’s environmental performance. However, these can still form valid criteria if they are part of the product’s whole life cycle.

The present EU Ecolabel Regulation does not allow the awarding of different labels (e.g. basic and premium standard) for the same product group (e.g. electricity). The EU Ecolabel is awarded if the relevant criteria are met, but it shows no distinction between levels of compliance. Adaptions in the legal framework are of course possible, but not in every case necessary.

The compatibility of individual award criteria for an EU Ecolabel for RES with Public Procurement Principle (PPP) for many criteria depends on whether a link to the subject matter can be established. Up to now, only a few legal criteria exist to evaluate a link, which operate with indefinite legal terms, (cf. 5.6.2). For compatibility with the EU Ecolabel, it is important to note that its use is rather flexible. Procurers are free to use only those criteria from the EU Ecolabel (e.g. as means of proof) that are relevant in their specific procurement. Where they use the EU Ecolabel as a “basis”, they are responsible for verification that the tenderers comply with their additional criteria.

6 Options for establishing a Union wide green energy label

This task aims at developing governance options and award criteria options for a European green energy label.

In the first section, minimum criteria for the development of label options are discussed including key criteria for governance, and major design options for award criteria, which also have implications on governance. The second section discusses principles for the development of award criteria, which are applied in the third section analysing individual award criteria characteristics. At the end of this section, an overview of award criteria for a Union-wide label differentiated by electricity, heating & cooling and gas is provided broken down into basic and premium award criteria. This also indicates criteria probably not applicable based on the Eco-label Regulation, and it indicates applicability of criteria to Green Public Procurement (GPP).

6.1 Minimum criteria for the development of label options

6.1.1 Key criteria and requirements for the governance of labels

For green labels, specific key criteria for the governance structures have been identified as an important parameter. While some criteria must be met, such as independence from market interests or GO-based verification procedures, others could or might be addressed in different ways, e.g. consultation stakeholder processes or financing concepts.

The following figure summarises key criteria for governance structures and indicates the principal options to address them.

Figure 6-1 Overview of key criteria for governance structures



Minimum governance requirements for labels

For EU-wide green labelling, some minimum governance requirements have to be fulfilled in order to comply with legal requirements and the overall environmental and strategic goals of the European Union. Each governance option covered in this chapter must meet the following minimum governance requirements:

- Union-wide coverage (plus EEA countries);

- being based on Guarantees of Origin (GO) as far as GOs provide the required data and information as stipulated by RED II Art. 19(13);
- promoting the use of energy from new installations as stipulated by RED II Art. 19(13).

The principles of ISO 14024:2018 should be followed because these principles are widely accepted for Type I environmental declarations.

6.1.2 Major design options

The following major design options, mainly related to award criteria, have major implications for the design of the label options and are therefore introduced here.

Graded label

A graded label, notably a two-tier label with a basic and a premium version, would be advantageous to serve different markets in Europe, where the renewable energy markets have a wide range of characteristics. In certain countries and regions, the basic version would better serve market needs, and may thus achieve more market uptake, while in other countries and regions the premium version could achieve a larger market share.

Basic and advanced award criteria

A basic and a premium label (where the governance option allows for a graded label), requires a definition of award criteria that correspond to the basic and the premium level. This is developed in the subsequent sections (i.e. 6.2 and 6.3.)

6.2 Principles for the development of options for award criteria

As requested by the Terms of Reference, different options for the definition of award criteria for a Union-wide green energy label have been elaborated. These options follow the requirements as defined in the Terms of Reference and as provided by further guidance by the European Commission. It is based on the work of tasks 1, 2 and 3 of this project. As a first step, criteria identified in task 1 (cf. chapter 3) and other research have been assessed on a general level with a view to their suitability for a Union-wide label. This assessment is provided in chapter 6.2. Based on this general assessment, proposals for sets of award criteria for electricity, for heating and cooling and for gases (including hydrogen) have been developed in task 4.3 (cf. chapter 6.3).

The following general principles have been applied for the development of these sets of award criteria, partly according to the criteria, which have been applied as minimum requirements for the governance options (see section 6.1):

- The criteria should be applicable for the EU (respectively EEA) framework;
- According to the provisions of Art. 19 (13) of the RED II, the criteria should have a focus on “promoting the use of renewable energy coming from new installations”. In a narrow sense, this can be understood as energy from such new installations should be used as physical supply of a labelled product. However, in a broader sense it is obvious that all energy is produced by all installations is used from a system perspective. The only possibility to further promote the use of energy coming from new installations is to increase the total volume of energy coming from new installations in general. As a consequence, the application of additionality criteria in a broader sense is considered crucial, in order to increase the total RES production in the given energy system;

- The criteria should be verifiable based on objective criteria with reasonable effort. This means that they should ideally be verifiable based on GO information or with reference to existing standards for which a verification scheme already exists. It is anticipated that in future GOs could facilitate the documentation of compliance with “labels” (cf. the draft revised CEN/EN16325). It is also anticipated that GO systems for heating and cooling and for gases will be developed and implemented by EU Member States according to the requirements of the Directive in time to facilitate this purpose;
- This strong role of GOs is also stipulated by Art 19 (13) RED II.¹¹¹ However, it is understood that GO information does not have to be the only means of documentation. Therefore, straight-forward top-level criteria which can be easily assessed by auditors in an objective way could also be applicable;
- The criteria and possible effects (particularly with a view to additionality criteria) should focus on a contribution to the EU energy system;
- With a view to the diverse market situation in different EU Member States, the aspiration is to define at least two different levels of ambition (basic and premium) for a labelled product (either by adding the requirements of different individual criteria, or by applying different levels of ambition for a given individual criterion);
- To some extent (as one optional set of criteria) the criteria should be applicable within the framework of the EU Ecolabel.

The extent to which criteria are applicable in the framework of green public procurement (GPP) is also assessed. This refers to the current regulatory situation and also considers that this could change in the future in order to strengthen the ecological impact of green public procurement in the context of the EU Green Deal.

In the end, two different sets of criteria have been developed:

- A recommended criteria set in order to address the maximum impact without further formal restrictions (which may apply under the existing EU Ecolabel Regulation or according to Principles of Public Procurement). This could be applied both for the case that a Union-wide label is developed from scratch, or that an existing label is further developed towards an official Union-wide label;
- A criteria set which is compatible with EU Ecolabel requirements (see Box 6-1).

In both options, the labels should ideally apply (at least as one possibility amongst various alternatives) criteria which are compatible with GPP requirements, and transparency rules should ensure that this can be documented within tendering activities. Lastly, the label criteria should aim at an application after the implementation of the RED II and have a mid-term perspective. This also means that (for the time being) they do not necessarily address possible long-term market developments. However, it is anticipated that label criteria can be further developed in time.

Box 6-1 EU Ecolabel criteria

The EU Ecolabel Regulation (Annex 6) supports criteria which should cover a market share of 10-20% products in the market in terms of environmental performance, which should ensure that it is safeguarded that consumers still have a choice, and it is not only possible for one or a very limited number of suppliers to provide an eligible product (e.g. because they are the only ones which have the patents and technology to fulfil the criteria). This is

¹¹¹ Art 19 (13) RED II: “[...] Suppliers shall use the information contained in guarantees of origin to demonstrate compliance with the requirements of such a label.”

found to be no relevant restriction in the case of the proposed criteria in this study. These criteria can be fulfilled by many suppliers, if there is a respective demand by end-consumers.

For the understanding of this assessment, the following aspects should be considered: Firstly, the proposed criteria do not aim at “production technologies and fuels”, but on electricity/energy *products* which are marketed towards end-consumers. Furthermore, energy production is depending on long-term investments and is difficult to influence by short-term market demand. As a consequence, a changed market demand for certain technologies and fuels does primarily not change energy production, but just result in a re-allocation of different energy characteristics to different consumers without relevant consequences for the environment. This is very different compared to other products and services, for which the EU Ecolabel applies. Therefore, it is not appropriate to focus on criteria for production technology and fuels in order to distinguish “top x%” as best in class (sustainability/eligibility criteria), but to put a strong focus on the aspect of “additionality” in order to identify the best energy *products*.

- Additionality criteria aim to provide incentives for an environmental benefit also on the investment side.
- Sustainability criteria over and above legal requirements have been defined for biomass and hydropower with the major aim to avoid strong negative environmental effects e.g. in the field of biodiversity, and thus to avoid a loss of credibility and reliability of the label in the market.

With respect to the share of existing electricity products which actually are compliant with the proposed criteria it shall be highlighted that electricity products which are offered towards end consumers are so diverse that it is hardly possible to identify how many % of products could apply to the criteria. Besides this, the definition of marketed electricity products can be changed by energy suppliers in a very short timeframe, so that those can adapt to label-criteria (particularly with respect to additionality) very easily (e.g. by changing the level of a fund contribution). Therefore, the criteria can be potentially fulfilled by many suppliers, if there is a respective demand and corresponding willingness to pay by end-consumers. As is also clear for the proposed criteria also for the other label options, the parametrisation of the criteria still will have to be adapted over time, taking into account the first market experiences on the one hand and the progress of RES production technologies on the other in order to find an appropriate level of ambition. Similarly, the labels could also be further developed to include additional or modified sustainability criteria if this is found to be appropriate.

6.3 General analysis of individual award criteria characteristics

6.3.1 Overview and introduction to the analysis approach

Criteria which have been identified in task 1 (cf. chapter 3) and other research have been assessed with a view to their suitability for a Union-wide label. This includes the criteria as listed in Table 6-1.

Table 6-1 List of generic criteria which have been analysed for application in a Union-wide label.

Company-specific criteria	e.g. criteria on investments and operations
Additionality criteria	Supply from new or additional plants
	Fund-model criteria
	Initiation of plants
	Modified contribution to national or EU-wide RES targets (“hard additionality”)
Eligibility and sustainability criteria	General criteria
	Fuel-specific or technology-specific criteria
Other criteria	Regional restrictions

For each of the listed criteria, the following characteristics have been analysed:

- Description of the criterion (including variations);
- Current application/examples;
- General applicability for different types of energy;
- Description of additionality mechanism;
- Assessment of actual additionality ;

- Practicability/operationability (auditors, producers, household and institutional consumers;
- Applicability for RES GPP;
- Applicability in different markets (e.g. depending on different stage of market liberalisation, consumer awareness or energy infrastructure);
- Applicability for Financing Mechanism;
- Applicability with EU Ecolabel Regulation;
- Documentation based on GO;
- Possible barriers to functioning;
- Possible solutions to existing barriers and helpful technical measures for implementation;
- Summary and Conclusion.

6.3.2 *Criteria-specific conclusions*

In the following, general conclusions from the analysis of the different possible award criteria are summarised.

Company-specific criteria

This criterion, as it is usually applied by energy labels in the EU for the time being, has no direct impact on the use of renewable energy coming from new installations, or a comparable approach towards additionality. However, taking into account that a major benefit of a green energy labels is raising public awareness and providing consumer information (cf. chapter 4), a positive selection of “sustainable” market actors may increase the credibility and uptake of the label.

Thus, it appears sound to apply such a criterion to an energy label. For reasons of objectivity and verification, it should rather focus on investments and operations than on company policy. However, taking company criteria into account is potentially problematic with a view to the regulations of the EU Ecolabel regulation and green public procurement legislation and this therefore restricts the application of such a criterion in this context. A decision on whether such a criterion should be applied or not (for applications besides EU Ecolabel and GPP) is arguably more of a political than scientific question and should be decided by the COM and the designated labelling organisation in discussion with relevant NGOs.

One option to exclude suppliers from an EU Ecolabel who, for example, trade electricity from nuclear power or from fossil sources could be a restricted definition of the license holder.

Additionality: Supply from new or additional plants

This criterion directly addresses the purpose of a Union-wide label as stipulated by Art. 19 (13) of the RED II. It is broadly applied for the time being at least for electricity, and can be verified based on GO information. Thus, it seems appropriate to be included as a criterion for a Union-wide label. Taking the link to the regulatory framework of RED II and the implementation of a new label, which should support the goals of the RED II as well as the climate target plan, the definition of “new plants” according to a commissioning date after the coming into force of the RED II seems favourable over the definition according to a strict age criterion. Such a regulation also has the benefit that a long-term marketing perspective is given for all new projects. This enhances planning reliability for long-term investments (e.g. facilitated by a long-term power-purchase agreement). With a view to a potential impact of voluntary markets for labelled energy it is a relevant question whether the greenness of the energy production is fully or predominantly financed by public support schemes. Thus, the label should focus on unsupported production. As soon as markets (and their willingness to pay) and full cost of energy production for RES align at a comparable level, this criterion will become less restrictive in practice.

In district heating markets, which already have very high RES shares, new RES plants might not be possible, or lead to the substitution of other RES plants. Therefore, this criterion can only lead to higher RES shares in district heating systems with a maximum share of RES in the overall fuel mix. For gas, this criterion might be limited on the supply requirements for electricity, which is used for the production of H₂.

Additionality: fund-model criteria

The fund criterion is commonly applied amongst energy labels in Europe for all different energy types. Contributions to the fund can be easily defined and verified. In principle, it seems very suitable for the application in a Union-wide green energy label.

However, there are restrictions with respect to the applicability for the EU Ecolabel and for GPP. Also, the direct dependency of the level of price from a fund-related surcharge conflicts with consumer's general willingness to pay.

It is critical to implement a practical and meaningful mechanism for the use of the fund. This includes both the question of eligible projects (RES installations, sustainability, other...) and of the governance (e.g. by the financing mechanism according to Art 33 of the Governance Regulation, by the labelling organisation, or by the labelled suppliers themselves).

Additionality: initiation-model criteria

From the perspective of an energy label in general, the initiation criterion can acknowledge market front-runners in terms of activities for new RES plants and provide incentives to become even more active. However, it appears difficult to apply on a pan-European level in a comparable way, and it might conflict with Public Procurement legislation. Furthermore, it seems to not appropriately address the situation and relevant barriers in the heating and cooling or gas sectors. Thus, it seems not to be particularly suitable for a possible Union-wide label.

Additionality: modified contribution to national or EU-wide RES targets ("hard additionality")

This criterion would be a powerful mechanism to empower consumers in a meaningful way to exceed EU RES targets. However, a decision on its application is obviously not up to any labelling organisation, but to the European Commission and national governments.

The possible solutions on existing shortfalls as outlined above should be taken into account when implementing such a mechanism.

Eligibility and sustainability: general criteria

This type of criterion can be defined quite differently, but it appears relevant based on the assessment of existing criteria and the objectives of a potential Union-wide label. Suitable sub-criteria which appear meaningful and practicable include a restriction on 100% RES and, for the sake of clarity, fulfilment of all legal requirements with respect to both EU and national regulation.

Eligibility and sustainability: fuel-specific and technology-specific criteria

Learning from existing labels, fuel and technology specific criteria can play a very relevant role. However, this should be balanced with the stated ambition of a Union-wide green energy label to enhance new RES installations. Furthermore, criteria should be defined in a way that they are objectively verifiable, ideally according to very straightforward general high-level criteria or to international reference standards, for which a verification mechanism is in place. A special focus should

be put on biomass. This fuel type can have (and had in the past) negative impacts on sustainability issues like biodiversity, and this is also in the focus of stakeholders.





Other: regional restrictions and preferences

For the sake of credibility amongst consumers, a physical connection between the point of consumption and the point of production of energy should apply. Besides that, strict restrictions can be avoided while transparency on the origin of delivered energy seems appropriate. To some extent, the administrative requirements (e.g. documentation being based on GOs) lead automatically to geographical restrictions.

The following Figure 6-2 provides an overview of award criteria options for a Union-wide label for electricity, heating & cooling and for gas.

Figure 6-2 Overview of criteria options for a Union-wide label for electricity, heating & cooling and gas

	Electricity	Heating/Cooling	Gas
Common	Common criteria		
Supplier	Premium: Exclusion of operators of coal / nuclear)	Premium: Exclusion of operators of coal / nuclear / oil)	
Eligibility and Sustainability	Biomass sustainability criteria	Biomass sustainability criteria	basic & premium: Biomass sust. / premium (fund)
	Hydro premium (fund)	Hydro premium (fund)	H ₂ : elec. = elec. sust. criteria; GHG threshold;
Additionality	New unsupport. plants basic / premium	New unsupport. plants basic / premium	H ₂ : elec. = elec. crit. (new unsupp /fund/target) basic / premium
	Fund basic / prem. EU target	Fund basic / prem. EU target	Biomass: fund

	Criteria also applicable for Ecolabel and GPP		Criteria not applicable for Ecolabel, but applicable for GPP
	Criteria possibly not applicable for Ecolabel and GPP		Future option

6.4 Proposed options

Three concrete options to establish an EU-wide green energy label including governance and award criteria are proposed here. The basis for these options is defined in the Terms of Reference, and the concrete design is described in the sections below.

Three governance options are proposed as summarised in the figure below.

Figure 6-3 Proposed governance options and proposed actions to establish an EU wide green energy labelling

Option 1: New EU label	Option 2: EU Ecolabel	Option 3: Existing green labels
→ <u>Establish</u> new Regulation for a new <u>graded</u> EU energy label and further award criteria	→ <u>No action</u> needed to change EU Eco-label Regulation (“leave it as it is”)	→ <u>Recognize</u> existing private labels in Europe that meet at least <u>EU minimum requirements</u>

6.4.1 Option 1: New EU label

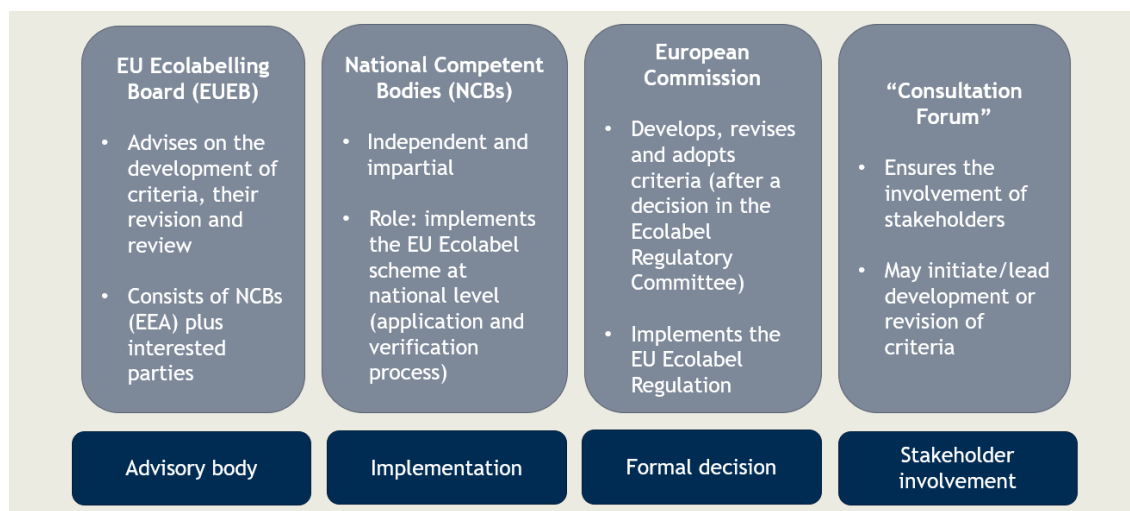
In Option 1, a new EU-wide green energy label would be established (to allow for a graded label). It appears most efficient to establish the new label through a new Regulation that is inspired by the existing EU Ecolabel Regulation rather than to revise the EU Ecolabel Regulation. The latter would have impacts on all the product groups that are in the scope of the EU Ecolabel Regulation and would touch on a large number of stakeholders potentially affected by the revision, which would lead to a high complexity of the revision process. Therefore, a much more efficient solution would be to establish a new EU energy label through a new regulation that would take up major elements of the EU Ecolabel Regulation, notably in terms of governance. In contrast to the existing EU Ecolabel Regulation, this new EU energy label would be graded. As an additional benefit, for upcoming future product categories there would be the choice of placing them under the existing EU Ecolabel Regulation if a non-graded label is appropriate, or under the new Regulation if a graded label is appropriate. A graded label, notably a two-tier label with a “basic” and a “premium” label, would be advantageous to serve different markets in Europe, where the renewable energy markets have a wide range of characteristics.

The main difference between this option 1 and option 2 is the establishment of a graded label, and the possibility to enlarge the options for further elements in the award criteria that are excluded in the current version of the Ecolabel Regulation. As a consequence, no differences in the governance are suggested as compared to option 2, but new and further options for award criteria are made available, e.g. to have label differences for electricity, heat and gas products, and a graded label is made possible serving different markets and consumer needs.

Option 1 requires additional marketing efforts for the introduction, perception and acceptance of new labels all over Europe. Once introduced, the EU Ecolabel for green energy does not exclude the existence and market presence of existing labels, or the emergence of new private labels, which may be expected to be the case individually in different Member States.

The governance of the EU Ecolabel is summarise in the figure below. The EU Ecolabelling Board (EUEB) is the advisory body to the EU Ecolabel and advises on the development of the EU Ecolabel criteria, their revision and the review of the scheme. National Competent Bodies are responsible for the implementation of the labelling scheme in each MS. Verification procedures may vary between MSs.

Figure 6-4 Overview of the governance structure of the EU Ecolabel



Source: Oeko-Institute (2020)

As this option allows for a graded label, there are two sets of award criteria; Basic Standard and Premium Standard. Below (Table 6-2) we give an overview of the most important aspects. The criteria which are outlined in the Table describe general types of criteria which, for a potential future application, need to be further detailed and parameterised (see also Box 6-1). Particularly, the given proposals for parametrisation, which are based on real-case values of existing labels, might need to be adapted. In order to ensure an up-to-date balance between cost and value of RES-E on the one hand, and consumers' willingness to pay on the other hand. In order to enhance comparability of different criteria (e.g. criteria for a share of new plants compared to the level of funds contribution), the expected effect on energy systems should be taken into account as far as possible. With respect to the level of the specific contribution to a fund, these should be defined in order to stimulate a similar amount of new RES as compared to the supply from new unsupported plants for the respective standard. For this purpose, a standard procedure could be based on the ratio of the required support level per kWh produced by new RES plants (which is to be paid by the fund) and the minimum share for new RES.¹¹²

Note that for some criteria we state that they are possibly not compatible with the GPP criteria because especially for a fund model and supplier-specific criteria, it can be difficult to establish a sufficient "link to the subject matter" as required by PP law. This depends on the exact way in which such a criterion would be built and the connection it has to the procured energy.

¹¹² Example: for a required minimum share of new plants of [33%] according to the label criteria and a required level of support of [3]ct/kWh produced RES on top of expected market revenues, the fund contribution could be 33% * 3ct/kWh, being 1ct/kWh of sold RES. For the use of the funds for any other purpose than the stimulation of new RES installations (e.g. for sustainability measures), the same financial contribution of the funds could be used as feasible indicator.

Table 6-2 Overview of set award criteria for label option 1

Award criteria category	Sub-criteria per energy carrier	Specifics
Basic	Common criteria	For all energy carriers Such as 1) All labelled energy shall be 100 % RES , being documented by the use of cancelled GOs; 2) All legal requirements shall be fulfilled both on national and on EU level; 3) All labelled energy shall be verifiable by independent third-party audits , including ex ante checks where possible, and a concluding ex post audit on a yearly basis and 4) All energy production which is supplied and documented by GOs shall physically be part of the same energy system as the respective energy consumption. Transparency rules should enhance transparent information on the geographic origin of the supplied energy towards end-consumers: For electricity, at least on the level of country of production. For heat, on the level of the district heating grid concerned. For gas, at least on the level of country of production.
	Sustainability and eligibility criteria	Biomass sustainability criteria for all energy carriers Such as 1) All sustainability requirements as given by the RED II are fulfilled , 2) All installations must fulfil the sustainability and greenhouse gas emissions saving criteria laid down in Article 29 paragraphs 2 to 7 and 10 (no capacity threshold) and 3) The biomass production must comply with the sustainability requirements of appropriate certification systems.
		Hydrogen: Eligibility of feedstock and energy input, GHG emission criteria Such as 1) Eligible hydrogen must be exclusively produced by electrolysis of water, 2) The electricity used must be of renewable origin and its use must be proven by cancelling the related Guarantees of Origin (GOs) and 3) The GHG emissions, calculated according to the delegated act under Art 28 (5) of RED II, must be lower than 30% of the fossil comparator, as defined in the RED II.
	Additionality ¹¹³	Supply model - new unsupported plants for electricity and H&C. Electricity: Supply of at least [15] % electricity from plants which became operational after the coming into force of the RED II, and which do not receive public support (as indicated on the GO). For H&C, the percentage is 15% ¹¹⁴ . For hydrogen, the electricity supply has to fulfil the additionality requirements of the Basis Standard.
		Fund model (but possibly not for GPP) for all energy carriers (including biogas) Fund for support of new RES, depending on the required level of support for the RES energy carrier: [15]% of e.g. [3]ct/kWh, being 0.45ct/kWh of sold RES. ¹¹⁵ For hydrogen, the electricity supply has to fulfil the additionality requirements of the Basis Standard.
E	Common	Common criteria for all See basic standard

¹¹³ For both the unsupported plants (supply model) and the plants that need support (fund model) we assume that there are criteria that help to prove that support is needed, securing that additional energy is installed instead of e.g. financing projects that would have been executed also in absence of a label.

¹¹⁴ In district heating systems with a share of RES in the overall fuel mix of up to [50]%

¹¹⁵ This number was suggested in Task 4 based on the ratio of the required support level per kWh produced by new RES plants (which is to be paid by the fund) and the minimum share for new RES

Award criteria category	Sub-criteria per energy carrier	Specifics
	criteria	energy carriers
	Supplier-specific criteria	Electricity and H&C (possibly not for GPP)
		H&C (possibly not for GPP)
	Sustainability and eligibility criteria	Suppliers do not own or operate nuclear plants or brown coal plants.
		Suppliers do not own or operate oil-fired heating plants.
		Biomass sustainability criteria for all energy carriers
	Additionality	See basic standard
		Hydrogen: Eligibility of feedstock and energy input, GHG emission criteria
		See basic standard
	Additionality	Hydro fund (possibly not for GPP) for electricity
		Specific contribution [X]ct/kWh hydropower electricity used in a labelled product. Management and purpose of fund to be determined.
	Additionality	Supply model: new unsupported for electricity and H&C
		Supply of at least [33] ¹¹⁶ For hydrogen, the electricity supply has to fulfil the additionality requirements of the Basic Standard.
	Additionality	Fund model (possibly not for GPP) for electricity, H&C and biogas.
		Fund to support of new RES, depending on the required level of support for the RES energy carrier: [33]% of e.g. [3]ct/kWh, being 1ct/kWh of sold RES ¹¹⁷ For hydrogen, , the electricity supply has to fulfil the additionality requirements of the Basic Standard.

6.4.2 Option 2: EU Ecolabel

With option 2, the existing EU Ecolabel will be applied as the official EU-wide green energy label. No immediate action is required to change the governance structure, since the EU Ecolabel Regulation does not have to be adjusted or modified. A major effort would nonetheless be required for defining the award criteria, and for introducing the label to the market. Once introduced, the EU Ecolabel for green energy does not exclude the existence and market presence of existing labels, or the emergence of new private labels, which may be expected to be the case individually in different Member States.

The label has the set of award criteria that relates to the Premium Standard in the other governance options (see table below).

¹¹⁶ In district heating systems with a share of RES in the overall fuel mix of up to [80]%

¹¹⁷ This number was suggested in Task 4 based on the ratio of the required support level per kWh produced by new RES plants (which is to be paid by the fund) and the minimum share for new RES

Table 6-3 Overview of award criteria for label option 2

Standard	Award criteria category	Sub-criteria/energy carriers	Specifics
No differentiation	Common criteria	For all energy carriers	See Table 6-1
	Sustainability and eligibility criteria:	Biomass sustainability criteria for electricity and H&C	
		Hydrogen: Eligibility of feedstock and energy input, GHG emission criteria	
	Additionality	(Possibly) Hydro fund for electricity	See Table 6-1 (Premium Standard)
		Supply model - new unsupported for electricity, H&C and for H2 electricity supply	
		(Possibly) fund model for electricity, H&C, biogas and for H2 electricity supply	

6.4.3 Option 3: Existing labels

With option 3, the EU will not establish or operate an official EU label for green energy directly, but it recognises private labels (or “labels existing labels”) that meet the minimum governance requirements and the basic and/or advanced award criteria.

“Recognising” needs to be examined thoroughly from a legal point of view (to prevent any issues of discrimination etc.). Such legal research that would aim at determining the appropriate legal instrument for option 3 is beyond the scope of this study. The proposed instrument should, in any case, be in line with the current initiatives of empowering consumers and green claims.

In addition to officially recognising those existing labels, EC support should be provided to cover the following elements:

- marketing support for the EU-wide recognition of the private labels, e.g. by officially promoting and listing the recognised private labels on websites, social media, PR campaigns and publications of the EU and the National Competent Bodies in each Member State, (*“active” marketing instrument*);
- allow the recognised private labels to state and advertise for themselves that they are officially supporting the European energy strategy and are in-line with EU requirements and targets (*“passive” marketing instrument; no active role of the EC*).

In this option little EU activity would be required to set up the governance structure of an EU-wide label concept, allowing for fast implementation once the appropriate legal instrument is identified. However, additional efforts and EU support would be required in particular during the introduction phase, as existing labels have to be validated and recognised by the EC as to whether they meet the defined criteria for EU-wide labelling of green energy.

In option 3, minimum requirements as well as basic and advanced award criteria will be defined and set by a European legal instrument. The process for defining these requirements and award criteria should follow a similar process as in the options 1 and 2.

Existing (or to be established) green labels can apply to the Commission to be recognised as an „EU green energy label” or “compliant with EU green policy” (→ “passive marketing support by EC”). To be recognised, they need to demonstrate compliance with the minimum requirements and the basic

and/or advanced award criteria. A regular and recurrent process would be established to supervise this compliance, e.g. requiring an annual report from the recognised labels, and an application every 5 years. This could be similar to the process established by the Renewable Energy Directive recast in Art. 30 for voluntary schemes setting standards for the production of renewable fuels. As existing labels are often not (strictly) national, the Commission should have the responsibility to decide on applications for recognition submitted by existing labels, and to monitor the annual reports. MSs are anticipated to have no dedicated governance role in this option 3.

Existing labels are well-established and highly valued by consumers, and often focus on one Member State or several MSs in one region of Europe. Existing labels are based on private governance structures. Many labels may, depending on the minimum requirements and award criteria to be defined, not fully meet these today, and may thus need to adapt their governance and/or award criteria in order to apply for EU recognition.

Minimum requirements will include an EU-wide coverage. Recognised labels are required to fully cover the EU and the EEA. The analyses in task 1 (see chapter 3) show that there is no single label that currently fulfils this requirement. Such a requirement would consequently put a high burden on labels interested in being recognised, and would thus have limited chances of being successful. In order to improve these chances, some financial support could be made available allowing applying labels to fully cover the EU and the EEA, or at least to expand their geographical scope. The minimum requirement of an EU-wide coverage is regarded as a soft criterion in this impact assessment as this strict criterion would eliminate many existing labels from being recognised and from the consumers' point of view this criterion is not very relevant.

For this option we propose the set of award criteria for a Basic Standard and for a Premium Standard (see Table 6-2). Due to the high complexity and variety of criteria which are applied by existing labels for the time being, probably all labels would have to align their criteria to some extent in order to be in line with the proposed criteria set. However, in order to allow for a higher level of “subsidiarity” by the different labels and their respective approaches, it could be appropriate to also allow labels to apply technically different criteria at least with respect to additionality. In this case, labels should be required to prove that their respective criteria have a similar effect on stimulating new RES installations as the proposed award criteria.

6.4.4 All options

Criteria development - transparency, comparability & consumer rights

The definition of the criteria and minimum requirements for an EU (graded) label for green energy and the corresponding official process for a continuing improvement also has to be integrated and harmonised with ongoing and upcoming processes and measures to improve EU consumer policies. The ongoing initiative to strengthen the role of consumers in the green transition specifically addresses the topic of “*setting minimum requirements for sustainability logos & labels*”¹¹⁸. As this process has already started (currently in the phase of public consultation, until October 2020), the development of an EU green energy label should be harmonised with this process.

¹¹⁸ See <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12467-Empowering-the-consumer-for-the-green-transition>

It is also recommended, that for each energy type, i.e. for green electricity, green methane, green hydrogen and green heating & cooling, specific award criteria are defined as proposed here in order to cater for the specific characteristics of each energy type.

Marketing support for the EU green label

For all three proposed options, EU-wide supporting activities with market information and campaigns for green energy labelling should be carried out or intensified. The EC should increase efforts for marketing, acknowledgment and official support of a new official label and for existing private ones that meet the EU minimum requirements and basic/advanced award criteria in order to increase the market relevance of the new label.

6.4.5 Overview of options: governance and award criteria

The proposed governance options are combined with the proposed and award criteria as shown in Figure 6-5.

Figure 6-5 Proposed options for governance and award criteria

	Option 1: New EU label	Option 2: EU Ecolabel	Option 3: Existing green labels
Governance	Public governance	Public governance	Private governance
Award criteria	Basic / Premium	Premium	Basic / Premium

7 Impact assessment

This task aims to assess the impacts of the different green label options which have been elaborated in task 4 (see chapter 6) covering the potential short and long-term costs and benefits, assessing the economic, environmental and social impacts in an integrated and balanced way and using both qualitative and quantitative analyses. The label options are compared against the baseline scenario of having no Union wide green energy label.

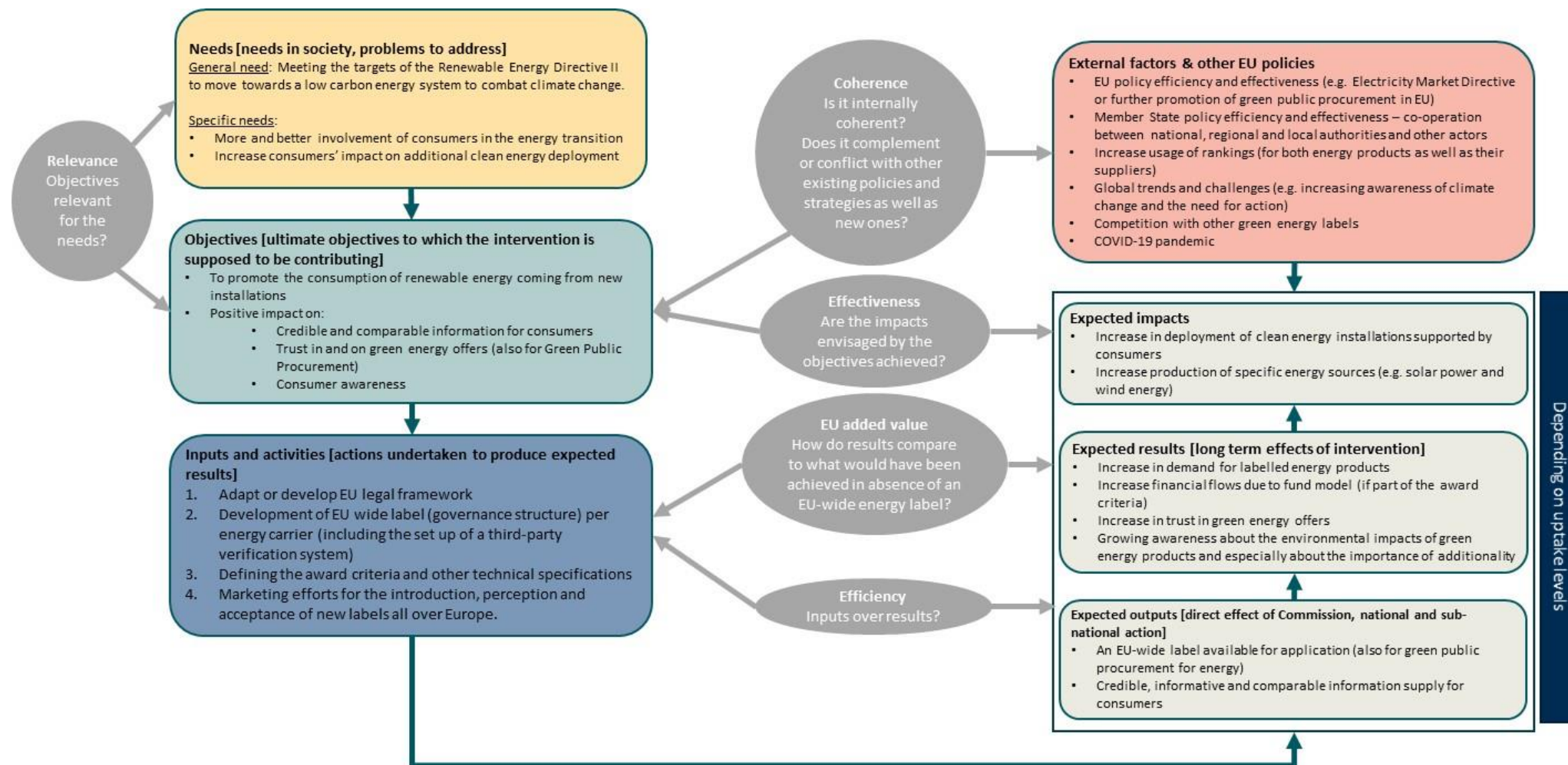
7.1 Problem definition and objective setting

The problem definition and objective setting are presented by means of an intervention logic (see Figure 7-1). An intervention logic presents the rationale behind a policy intervention in a structured way. The starting point of the intervention logic is the “problem” that is being addressed by the intervention. Precisely describing the problem(s) also serves to answer the question of why should the EU act? This question aims to verify whether Member States alone could resolve it sufficiently and whether the EU has the competence to act (i.e. a legal basis), and would be best placed to do so.¹¹⁹

This first steps allows the assessment of **relevance**, to test the link between the problem and the objective(s) of an EU wide green energy label. The “objective” of the EU-wide energy label describes what should be achieved and are translated into “actions” which are taken by the Commission, Member State authorities and others to implement. The “actions” have consequences and lead to “results and impacts”, which jointly form the expected results.

¹¹⁹ Better Regulation Guidelines

Figure 7-1 Overview of intervention logic for an EU-wide green energy label



Problem

The Renewable Energy Directive recast stipulates a target of at least 32 % renewable energy in gross final energy consumption by 2030. This framework is further complemented by the other elements of the Clean Energy for All Europeans package¹²⁰. The European Green Deal aims for Europe to become the first climate neutral continent by 2050.¹²¹ This requires a fundamental transformation of Europe's energy system, with the Energy Union being the main policy instrument to deliver this transformation. The importance of increasing renewable energy production is underpinned in all five dimensions¹²² of the Energy Union. As reaching the target of the RED II in 2030 is not yet secure, further support is needed. As such, the RED II places a special emphasis on the role of energy consumers and how they can be empowered to help facilitate the energy transition.

The problem that an EU-wide energy label aims to address is the limited impact of consumers on the deployment of new clean energy installations. In task 2 of this study (see chapter 4), different drivers of this problem have been identified such as low consumer demand for green energy which can be partly explained by limited willingness to pay and low awareness of the importance of green energy (or even additionality)¹²³. This low awareness among consumers is partly fuelled by the lack of clear, comparable and credible information about (green) energy products.¹²⁴ The information presented on green energy tariffs varies across Member States and across energy carriers. In some countries, the implementation of the Internal Electricity Market Directive 2009/72/EC¹²⁵ does not ensure sufficient access to relevant and understandable information by consumers. In addition, the GOs do not include all information necessary to inform the consumer about their contribution to the energy transition (including for instance the age of the energy installation).

Why should the EU act?

The EU could act, as an EU-wide energy label could have the potential to be widely applied (as for instance with the EU Ecolabel) and contribute to consumer awareness. Notably, it is expected that a label supported by the EU will enjoy more institutional credibility. The scale and transnational nature of green energy products, (cross-border) trade and cancellation of renewable energy GOs also suggest that EU-level action could be appropriate. However, one should consider that action can also be taken at EU Member State or even at regional level.

Objective

Art. 19 (13) of the RED II states that “The Commission shall adopt a report assessing options to establish a Union-wide green label with a view to **promoting the use of renewable energy coming from new installations**. Suppliers shall use the information contained in GOs to demonstrate compliance with the requirements of such a label.” As such, we understand the **main objective** of the EU-wide label to be the promotion of consumption of renewable energy coming from new installations. The findings from the assessment of the impacts of existing labels show that their impact on additional renewable energy deployment is very limited. As such, we also include some other impacts that are expected to be more

¹²⁰ See https://ec.europa.eu/energy/topics/energy-strategy/clean-energy-all-europeans_en

¹²¹ See <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-1.html>

¹²² These are 1) Security, solidarity and trust, 2) A fully integrated internal energy market, 3) Energy efficiency, 4) Climate action, decarbonising the economy and 5) Research, innovation and competitiveness

¹²³ Another explanation for the low demand for green energy products is that the price component remains an important factor in the purchase decision making

¹²⁴ The extent of disclosure practices depends per country (with some countries not even having a GO system in place) and per energy carriers (there is no GO system for gas and heat and cooling).

¹²⁵ This directive established the consumers' right to be informed about the sources of the electricity they consume and the environmental impact associated with the electricity generation (such as greenhouse gas emissions, radioactive waste) for their tariff

pronounced, e.g., the positive impacts on credible and comparable information about (green) energy products for the consumer, consumer awareness and trust in and use of Green Public Procurement.

Evaluation criteria

The intervention logic also highlights the evaluation criteria which are further detailed in the step 4.

Relevance addresses to what extent the options are relevant to address the identified needs.

Effectiveness addresses the relationship between the formulated objectives and the results actually achieved. However, **external factors** will also have an influence on the expected results. Such external factors can vary in scale, range and perceived impact, ultimately affecting the effectiveness of the entire intervention. These factors can include, inter alia, the impact of other legislation, growing demand for green energy due to increasing awareness for climate change etc.

The evaluation of **efficiency** relates to the resources used to achieve the actions and outputs required by the EU-wide energy label in comparison to the effects: are these in balance? **Coherence** relates to the relationship between other EU (and MS and international) policy and **EU added value** considers if the objectives of the Strategy are in line with the objectives of other EU policies? i.e., do they contradict each other? and if EU, as opposed to MS, level action is justified.

7.2 Green label options

In chapter 6 of this study, three label options have been developed: 1) New EU label, 2) EU Ecolabel and 3) Existing green labels. Each of the three proposed label options have different governance structures and award criteria sets. In the Figure below, we show the combinations of governance structure and award criteria per label option.

Figure 7-2 Proposed options for governance and award criteria.

	Option 1: New EU label	Option 2: EU Ecolabel	Option 3: Existing green labels
Governance	Public governance	Public governance	Private governance
Award criteria	Basic / Premium	Premium	Basic / Premium

7.2.1 Alternatives

The main reason to investigate the possibilities for setting up an EU-wide green energy label is to promote the consumption of renewable energy from new installations. The idea behind this is to stimulate the deployment of renewable energy generation and thereby contribute to the transition to a (near) zero-emission energy system. Energy labelling is clearly a consumer-side instrument, but there are also many policy instruments that are focused on the promotion of renewables on the supply side. Such measures include the RE target that is included in the RED as well as some additional sector specific targets and RE obligations. Strengthening such targets could also lead to additional RE deployment and as a consequence also promote additional consumption from new RE installations.

One of the key findings from the assessment of the impacts of existing labels was that the provision of consumer information and guaranteeing the sustainability of the energy supplied are among the most important benefits of existing green energy labels. This aspect will be further strengthened by the ongoing initiative that investigates the possibilities for setting minimum requirements for sustainability logos and labels. However, it also became clear that EU Member States have very strong differences in the quality of information provided to consumers and the level of consumer trust in the information provided and consumer satisfaction, often independent of the activity levels of green energy labels in the market. This shows that other national policy tools and market factors as well as the way in which EU legislation is enforced can have substantial effects on the amount and quality of information provided on the origin of energy that is supplied to the consumer. This also means that there are alternatives to the development of an EU-wide green energy label which also aim at the provision of information to consumers. The following policy alternatives could be implemented as alternatives/ or complements, to the green energy label:

- **Standardised transparency requirements for energy suppliers based on GOs**, whereby energy suppliers consistently and uniformly provide transparent information to consumers regarding the energy supplied (including information available in the GOs, such as specific energy source, age of the plant, country of origin, etc.).¹²⁶ An example of this is the Dutch full-disclosure requirement applicable as of January 2020, where Dutch electricity suppliers are obliged to prove the source of all electricity they supply (including electricity produced from fossil sources).¹²⁷ Based on such information consumers can make informed choices on whether the tariffs offered meet their demands in terms of environmental effects, the contribution to the energy transition or other elements;
- **Use the available information to increase consumer awareness and guide consumers in tariff selection**, e.g., via rankings of energy suppliers. Rankings could respond to consumers' need for a comparison tool that compares the sustainability performance of different energy offers (and/or suppliers) and information about the source of their energy, but also on the environmental performance of the company supplying the energy. Guidelines could be developed for consumer organisations on best practices for making such rankings;
- **Promote and encourage green public procurement (of energy)**, by e.g. providing more guidance to public authorities by giving them information, training, and the right resources to apply GPP. As part of this guidance it should be made clear that procurement of renewable energy is an important part of green public procurement and that large public consumers can assert significant influence over the development of new renewable energy installations;
- **Enhance information provision on the physical and economic activities of energy suppliers**. One of the caveats of the GO system, is that the trade in GOs is not linked to physical energy generation or procurement. This means that energy retailers can sell green energy tariffs, while theoretically all the physical energy they procure on the market can be fossil based or they can be themselves active in fossil-based power generation. This means that consumers lack information on the physical energy procured by their energy company, the power generation activities of their supplier as well as the investment portfolio of their supplier. The Commission could investigate possibilities for obliging energy companies to clearly disclose this

¹²⁶ GOs contain information about the source of energy and its origin, but in many cases the supplier does not disclose this information to the consumer (it only needs to disclose the total fuel mix). In addition, the grey energy sources are often not disclosed as well.

¹²⁷ ACM (2020). Stroometiket: groene en grijze energie. Via <https://www.acm.nl/nl/onderwerpen/energie/energieleveranciers/stroometiket/stroometiket-groene-en-grijze-energie>

type of information to consumers, to complement the information provided on the origin of the energy supplied via the GOs;

- **Explore options to strengthen the link between physical energy production of purchases by suppliers with GOs sold.** Although, the GO system has been effective in establishing a harmonised and credible book & claim system and promoting cross-border trade of renewable energy certificates, its success in enabling consumers to contribute to the transition to renewables is debated. Some suppliers have responded to the existing criticisms on the GO system by marketing their energy contracts by showing that they do purchase their energy and GOs from the same renewable energy producers, through PPAs. Depending on the details of these supply contracts and the underlying PPAs, such practices can increase consumer confidence in their green tariffs and ensure them that they are contributing to the energy transition through the support of (local) renewable energy producers. The EU could explore options to promote solutions that strengthen the linkage between physical renewable energy flows and the associated GOs;
- **Explore options for enabling any energy supplier to include contributions to the EU Renewable Energy Financing Mechanism in their energy tariffs.** In our evaluation of the impacts of existing labels it was concluded that labels using fund models can have an impact on additional renewable energy deployment. However, financial contributions to renewable energy deployment do not necessarily need to be coupled to green energy labelling. The commission could also consider a setup where suppliers include a small component in their tariff prices which can feed into funds for renewable energy deployment, such as the EU Renewable Energy Financing Mechanism. In this way suppliers can enable consumers to contribute to the energy transition regardless of the type of energy tariff. However, such a possibility would require some form of validation to prevent false claims/green washing. This could be done through an obligation to disclose the total amount of income derived from premiums paid by consumers combined with a proof of payment of this amount to a renewable energy investment fund, preferably one with a demonstratable additional contribution to renewables deployment (e.g. the private/EU-level part of the EU RE financing Mechanism). Such elements could be checked by an independent organisation, such as the National Regulating Authority.

7.2.2 Baseline scenario

The (IA) baseline is a "no policy change" scenario which includes all relevant EU-level and national policies and measures which are assumed to continue in force. There are a number of trends and elements that form the basis of our baseline scenario, of which the most important ones are:

1. **A rather stable market for existing green energy labels** - Our analysis in task 2 (see chapter 4) shows that a broad range of energy labels exist in Europe mainly addressing electricity, though often with a regional/national focus. In most EU countries the market share of green energy labels is rather limited (with a market penetration of <1%), with the exception of Germany and some Scandinavian countries. There are no reasons to believe that this situation will change significantly in the coming years;
2. **Sustained growth of the RE share in final energy consumption** - Due to increasing policy ambitions regarding RE deployment and GHG reductions combined with continued cost reductions in RE generation technologies it can be expected that the share of renewables in the energy mix will increase significantly in the coming decade, especially in the electricity sector.

As the share of renewables in the electricity sector may grow faster than the consumer demand for renewable energy, this might lead to a decline in GO prices.;

3. **Growing consumer focus on domestically produced RE** - With the growing awareness of climate change and the need for an energy transition, the attention of consumers on increased deployment of renewables in their own country or even region is also growing. This may also lead to a growing demand for the consumption of locally produced renewable energy;
4. **Green gas** - Even though renewables have already reached significant shares in the electricity markets, this is not the case in the gas market. Currently, most green energy tariffs only offer CO₂-compensated natural gas instead of renewable gas. In 2018, only around 0.6% of the gas consumed in Europe was biomethane (2.3 bcm).¹²⁸ With the right support systems in place, the production of biomethane could grow to 16 bcm in 2030,¹²⁹ which would then account for roughly 4-6% of the total gas demand in the EU27;¹³⁰
5. **Heat networks** - currently, heat networks account for a minor share of the heat supply in the EU and most grids have a single supplier (with the exception of some countries, like Denmark). Up to now no policies have been implemented that are expected to significantly change this situation, although some policy options are being considered in the ongoing impact assessment on the revision of the Renewable Energy Directive;
6. **European Green Deal** - The “European Green Deal”¹³¹ is the new growth strategy to transform the EU into a fairer and more prosperous society, which is also modern, competitive and where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. The European Green Deal is included in the baseline as it will have an influence (among others) on consumer information practices¹³² and the extent to which criteria are applicable in GPP. GPP rules are expected to evolve with respect to increased ambitions in GHG targets¹³³. While the Public Procurement legislation is not expected to change, sectoral legislation may change to make GPP criteria mandatory for certain products.

Box 7-1 The impacts of COVID on the energy market

The COVID-19 pandemic has had and is still having, an enormous impact on the EU economy as well as energy system. As a consequence of the vast reduction in international as well as domestic transport movements international oil prices plummeted and associated energy prices such as the gas price also dropped. In the short term, this will lead to decreased energy costs for consumers. At the same time, the pandemic has led to the worsening of the personal economic situation of many Europeans, especially for entrepreneurs and those who were working in sectors that have been hit hard by the measures against the spread of the virus. For the heavily impacted households this might result in economic behaviour focused on minimising costs, which in the context of energy consumption might mean the choice of the cheapest, but less ‘green’ tariff. However, it is currently too early to determine how large such effects may be and for how long these may last. Even though it is clear that COVID-19 will impact the energy market, we will not take these impacts into account for the purpose of this study.

¹²⁸ EBA (2019). [EBA Statistical report 2019: European Overview](#).

¹²⁹ ENTSO-G (2017). Ten-Year Network Development Plan 2017.

¹³⁰ Depending on the energy scenario chosen, EC (2016) Eu Reference scenario 2016 gives estimates a gas consumption of 322 Mtoe (346 bcm) for the EU27 in 2030, the scenarios in the recent IA on Stepping up Europe’s 2030 climate ambition - SWD(2020) 176 final - estimate a gas consumption of 219-232 Mtoe (269-285 bcm).

¹³¹ COM (2019) 640.

¹³² In order to enable consumers to play an active role in the ‘green transition’, the Circular Economy Action Plan (CEAP) announces an initiative to improve consumer information and strengthen consumer protection against commercial practices that run counter to Green Deal and CEAP objectives (e.g. ‘greenwashing’). See for more information COM/2020/98 final, adopted by the Commission on 11 March 2020

¹³³ See https://ec.europa.eu/clima/policies/eu-climate-action_en

7.3 Assessment of impacts

In order to compare the options above, we have assessed different impacts related to main objective of the intervention which is understood as promoting the consumption of renewable energy coming from new installations. The extent to which a label will have a substantial impact on different aspects strongly depends on the uptake of the label.

Table 7-1 List of selected impacts and potential indicators. Indicators highlighted are tackled qualitatively.

Criteria	Impact aspect	Indicators
Relevance	-	<ul style="list-style-type: none"> Are the objectives relevant for the needs?
Coherence	-	<ul style="list-style-type: none"> Is the label coherent with other existing policies and strategies? (inc. biomass sustainability)
Effectiveness	Green label adoption (ranges & assumptions regarding uptake)	<ul style="list-style-type: none"> Demand for new label Changes in market share of labelled energy
	Deployment of new /additional renewable energy	<ul style="list-style-type: none"> Additional renewable energy installations and capacity enabled (Calculated using the financial flows that might become available if the EU-wide label were to use a fund model)¹³⁴
	Environmental: Greenhouse gases emissions	<ul style="list-style-type: none"> Gross avoided greenhouse gas emissions by additional installations
	Social: Employment	<ul style="list-style-type: none"> Number of jobs created by additional renewable installations
	Consumer information	<ul style="list-style-type: none"> Transparency of 'green' tariffs: availability of information on labels and supplier offers Visibility of green labels / existence of national rankings
Efficiency	Economic: Label costs	<ul style="list-style-type: none"> Distribution of labelling costs among stakeholders Costs for establishing/operating the label
EU added value ¹³⁵	Green label adoption	<ul style="list-style-type: none"> Interaction with existing labels Credibility of governance structure Assessment of label attributes relevant to social acceptance

These impacts have been selected aiming to cover the potential short and long-term costs and benefits, assessing the economic, environmental and social impacts in an integrated and balanced way and using both qualitative and quantitative analyses. They also build upon the findings of previous tasks, in particular the analysis of the existing impacts of green energy labels, focusing on the impact areas where the largest effects were observed or those that match the key objectives of the label.

¹³⁴ We acknowledge that renewable energy consumption could be increased by the extent that GOs cover existing renewable energy capacities, but this does not affect the physical amount of energy consumed. Therefore, we only consider an increase in production to be an additional impact on consumption.

¹³⁵ How do results compare to what would have been achieved in absence of an EU-wide energy label?

Box 7-2 Impact areas excluded from the analysis

The impact area that we did not look at are the impacts on **market functioning** (supplier switching, the green tariff product offer and cross-border trade) as the labels and their criteria are not aimed at improving energy market functioning as such and the impacts of existing labels in this area were found to be negligible. Furthermore, we did not specifically analyse the extent to which labels promote **consumption of renewable energy from specific sources** as this impact was found to be rather limited in task 2 (see chapter 4) and it is also not an objective of the EU-wide label.

It is important to note that in addition, there will be other environmental benefits which have not been assessed in detail which are related to sustainability criteria (e.g. which can be included as part of the company specific criteria, or the eligibility and sustainability criteria). Chapter 4 provides more details regarding these impacts in the context of existing green energy labels.

7.3.1 Relevance

Box 7-3 Summary of the relevance criterion

Relevance looks at the relationship between the needs and problems in society and the objectives of the intervention. Relevance analysis is very important because if an intervention does not help to address current needs or problems then it does not matter how effective, efficient or coherent it is no longer appropriate. This is why there is a strong link between relevance analysis and the criteria of EU added value which assesses whether action continues to be justified at the EU.

Key take-aways

An EU-wide green energy label seems to be a relevant instrument to address the limited involvement of consumers in the transition to a high share of renewables in the energy system.

The EU has set the objective of increasing the share of renewables in the overall energy supply and consumption. Up to now, the influence of consumers on the transition to an increasing share of renewables has been limited. The exploration of an EU-wide green energy label to provide suppliers with an additional tool to show the sustainability of the energy supplied to the consumer in a credible manner, fits within this desire to give consumers more influence in the energy transition. The question is, however, whether an EU-wide green energy label is the preferred way to achieve this, as alternative options to reach this goal are available (see section 7.2.3).

7.3.2 Coherence

Box 7-4 Summary of the coherence criterion

Coherence focuses on where and how EU interventions would work well together (e.g. to achieve common objectives or as complementary actions) or point to areas where there are tensions (e.g. objectives which are potentially contradictory, or approaches which are causing inefficiencies).¹³⁶

Key take-aways

- From the perspective of promoting consumption of renewable energy by improving the credibility of green energy tariffs, an EU-wide green energy label seems to be complementary to the GO system. Although meant as a cross-border tracking tool, GOs can also be used as a tool for market players and NGOs to provide consumers with information on the type of energy the consumers are paying for in their green tariffs. However, in many MSs the information contained in the GOs is insufficiently explained to the

¹³⁶ Better Regulation Guidelines

consumer in order to help them to make an informed decision. Since physical energy trade and trade in GOs are independent markets, the information contained in the GOs alone does not contain all the information required to judge the overall sustainability of a certain green tariff or the supplier behind it. An EU-wide green energy label is, amongst others, a solution to improve the guidance of consumers through better use of the information contained in GOs as well as information that goes beyond that. Furthermore, it is well-aligned with the ambition stated in the EU Green Deal to provide more reliable sustainability information to consumers to enable them to make more sustainable purchasing decisions;

- From the three label options, the inclusion of the green energy label in the EU Ecolabel (option 2) is most coherent with the existing policy framework as this label is already present in the market.

The reason to set-up an EU-wide green energy label is to **promote the consumption of renewable energy from new renewable installations**. This objective has two sides, one being the promotion of new renewable energy deployment and the second one increasing the consumer driven support for renewable energy. When looking at the promotion of renewable energy deployment overall, the EU has a wide range of policy measures in place which directly or indirectly stimulate the uptake of renewables in the energy system. The most prominent of these being the Renewable Energy Directive and its renewable energy targets for 2030. As a consequence of these targets, Member States have set up large financial support schemes to spur renewable energy roll-out. This resulted in an absolute growth rate of renewable energy production of 3% per year since 2010, and an average annual investment of around € 62 bn over the period 2010-2018.¹³⁷ However, in some end-use sectors, most notably the heating and cooling sector and transport, the share of renewable energy use has grown at a rather slow pace.

As reflected in the previous paragraph, the growth in renewable energy generation capacity during the last decade has mainly been supply driven. At the same time, the EU has also undertaken action to stimulate consumers to buy renewable energy. The main instrument for this is the system of guarantees of origin, which was introduced as part of the Renewable Energy Directive. The aim of this system is to *'show to final customer that a given share or quantity of energy was produced from renewable sources'* and to *'allow the consumer market for renewable electricity to contribute to the development of energy from renewable sources.'*¹³⁸ In the meantime, the GO system has become a rather effective tool for providing the consumer with credible information on the origin of the energy purchased. In 2018, GOs were issued for roughly 64% of the renewable electricity generated and 89% of these GOs were cancelled, meaning that this share of the issued GOs was actually sold and consumed as renewable energy.¹³⁹ Overall, this means that around 56% of all renewable electricity generated is purchased as 'green' electricity by consumers, up from only 39% in 2010.

The aforementioned data show that the demand for green electricity is still growing and our findings from the survey and interviews indicate that for most people price differences, rather than a lack of information are the main reason for consumers not choosing a green tariff. Currently, information on the origin of the energy sold to consumers is often backed up by guarantees of origin owned and cancelled by the supplier. These GOs in principle contain enough detail on the origin of the energy to provide the consumer with sufficient information to make a well-informed purchase, when this information is provided in a meaningful way by energy suppliers or third parties such as consumer organisations. There are for example energy retailers that specifically market energy tariffs with 'Dutch

¹³⁷ Trinomics, Enerdata & Cambridge Econometrics (Forthcoming) Energy costs, taxes and the impact of government interventions on investments - Final report energy subsidies.

¹³⁸ Directive (EU) 2018/2001 - on the promotion of the use of energy from renewable sources. Recital (56)

¹³⁹ RECS International (2019). Development of the guarantees of origin market 2009-2018.

wind energy’ based on Dutch wind energy GOs. In principle, similar tariffs could be set up specifically for new plants of a certain type.

In summary, GOs contain the right information for market parties (i.e. suppliers) to provide the consumer with the relevant information for making a choice for a tariff that does or does not support specific types of renewables or plants of a certain age (e.g. new installations), but it remains hard for consumers to judge by themselves whether the choice for a certain type of contract contributes to renewable energy deployment. For this, an additional effort needs to be made by suppliers, consumer organisations or labels and as such an EU-wide label could complement the existing GO system. This means that although both GOs and a green energy label are both aimed at enabling the consumer to make an informed choice, their specific aims are slightly different as the former ensures that the necessary information is available in a harmonised and credible format (if adequately provided to the consumer in the tariff information provided by the supplier), whereas the latter aims to guide the consumer on which parts of this information are important if one wants to make a contribution to the energy transition. The GO system by itself does not ensure that all relevant information on the origin of the energy supplied to the consumer is provided to the consumer. From this perspective, an EU-wide green energy label is consistent with and complementary to the GO system. Additionally, further steps to improve the “reliability, comparability and verifiability of sustainability information”¹⁴⁰ provided to consumers is in line with other ongoing policy initiatives in the EU, and contributes to the ambition stated in the EU Green Deal to enable consumers to make more sustainable purchasing choices through improved information.

There is still room to improve transparency and consumer information within existing policies

Our research also indicated that there is still room for improvement with regard to consumer information provided by energy suppliers. Furthermore, there is a growing demand from consumers to contribute to the energy transition in their own country or region. As such, more transparency on the extent to which their energy tariffs and supplier do so could help consumers in making more informed decisions. However, all these elements could be addressed within the existing policy framework and this would only require the inclusion of some additional aspects in existing legislation.

Additional disclosure obligations for suppliers could be introduced on some additional specifics of the GOs backing up their green tariffs, e.g. on the geographical origin of the renewable energy and the age of the installations. The Internal Electric Market Directive already mandates that suppliers disclose the fuel mix of the electricity tariffs they sell to their customers. Even though this is already mandated by law, it is poorly enforced in many Member States. Even when fully enforced, green tariffs that are only backed up by GOs without renewable energy procurement or production activities by suppliers are often considered to be greenwashing.¹⁴¹ To address this lack of a link between GOs and physical energy flows measures could be explored that provide more insights on the activities of suppliers in relation to their energy procurement, investment activities and their own energy generation assets (for vertically integrated suppliers). Obligations to disclose information on such aspects could empower consumers to make more informed choices, even in the absence of an energy label.

¹⁴⁰ COM(2019) 640 final - [The European Green Deal](#).

¹⁴¹ [BEUC \(2019\). The future of energy consumers - bright or burdensome?](#); Consumentenbond (2020) Onderzoek duurzaamheid Nederlandse stroom-leveranciers.

Different label options from a coherence perspective

The different options for an EU-wide green energy label presented in this work differ with respect to their coherence with the current policy framework. In this respect, option 2 (the incorporation of a green energy label in the existing EU ecolabel) is the most coherent option as it aligns exactly with the EU's current approach to ecolabeling. The third option, namely the recognition of some existing private labels is not necessarily inconsistent with the existing policy framework, as different labelling instruments for different markets already exist. However, this option might create market distortions as some existing labels might be favoured as they are eligible for recognition by the EU label, whereas others might not be eligible. As a consequence, the market share of the latter group might be negatively impacted by the introduction of the EU label. This seems to be at odds with the market-neutral approach that the EU usually takes.

The first option, the creation of a new EU label for green energy creates less interference in the market than label 3, but it does create a new label instrument in addition to all the labelling instruments that already exist within the EU policy framework. This does not necessarily mean that such a new label is not coherent with the overall EU policy framework, as multiple labelling instruments already exist in the area of energy (e.g. energy labels for appliances and for buildings). However, from a coherence perspective option 2 would be preferable over option 1 as it mitigates the risk of creating confusion by introducing additional labels in the market.

7.3.3 Effectiveness

Box 7-5 Summary of the effectiveness criterion

Effectiveness considers how successful EU action could be in achieving or progressing towards its objectives.¹⁴²

Key take-aways

While the different governance options will impact the **uptake level** of the EU green energy label, we expect the general uptake level to remain low (under 2% of the final energy consumption). Taking all aspects into account, we would expect a lower uptake of a new EU label (option 1) compared to the EU Ecolabel or existing labels (options 2 and 3).

Regarding the impact on the deployment of new/additional renewable energy, we expect an impact only from the fund model while the impact of the supply model remains uncertain¹⁴³. The level of contribution to the fund will vary depending on whether the basic or premium standard is applied with higher impacts for the premium standard. The additional contribution from the fund model remains limited, especially if compared, for example, to the level of subsidies destined for renewable electricity at EU level. The fund model could lead to additional RES generation capacity, new jobs and avoided GHG. The size of the impact would depend on the level of contribution to the model (but would be the same across governance options).

In terms of consumer information and transparency, all three label options improve the consumer information by increasing the transparency on 'additionality information', 'the impact on environment such as the fuel mix' and 'the governance system'.

The extent to which a label will have a substantial impact on different aspects will depend strongly on the uptake of the label. Existing labels only cover a minor market share, well-below 1%, of total energy

¹⁴² Better Regulation Guidelines

¹⁴³ The perspective for a premium market segment under an EU level can have an increasing influence on investment decisions in the future; however, based on the impact assessment of existing labels, no supported investment has been identified so far from this model.

consumption. Considering the current market uptake of energy labels, we expect limited uptake of an EU-wide label. The following sections focus on:

- Aspects impacting the uptake level;
- Uptake scenarios;
- Impact analysis based on uptake scenarios of:
 - Deployment of new renewable capacity;
 - GHG emissions avoided due to new capacity;
 - Jobs created due to new capacity.
- Impact on consumer information aspects.

Green label adoption (ranges & assumptions regarding uptake sensitivity)

The extent to which a label will have a substantial impact on different aspects will depend strongly on the uptake of the label. There are several factors that impact the label uptake. These are discussed qualitatively in the table below (Table 7-2) for each of the label options. It is important to note that uptake levels for all options could be increased by using supporting measures such as, information campaigns and GPP related measures.

Table 7-2 Aspects impacting label uptake

Aspect	Impact	Baseline	1. New EU label	2. EU Ecolabel	3. Existing labels
Consumer interest	An increase in consumer interest would lead to a higher uptake of green energy labels. Based on the market shares of existing labels (of under 1% of final energy consumption) consumer interest is limited and is expected to remain so in the future. We do see an increased interest from corporate consumers in purchasing green energy (e.g. RE100 ¹⁴⁴); however, we do not expect the EU label to have a strong impact, given to its voluntary nature. Interest could be increased through targeted supporting policy measures, for example concerning GPP. This aspect would impact all options in the same way.	Low consumer interest	Low consumer interest	Low consumer interest	Low consumer interest
Trust in the label	Trust in the label (including its governance structure and award criteria) plays a role on the uptake level. Here minimum criteria on transparency and reliability such as third-party verification are taken into account, as well as the perception of consumers on the credibility of the organisation structure behind the label. Consumers may trust the EU Ecolabel and existing labels (which have existed longer and have a trajectory in the market) more than a new label, which would need some time to gain this trust and credibility in the market. Option 1 requires additional marketing efforts for the introduction, perception and acceptance across the EU. Option 3 would enhance the credibility of the recognised existing labels in the eyes of the consumers. This should have a positive impact on the market share of such labels, and green energy labelling in general. In the case of option 3, there may however be a risk of a reduced market share for existing labels which are not recognised by the EU, though this effect is uncertain (see also 'eligibility of existing labels' below).	Medium trust on existing labels	Low trust on new label in the first years after set-up Higher trust potential in the longer term	Medium trust on EU Ecolabel	Medium trust on existing labels
Award criteria & consumer preferences	The relevance of the award criteria and the extent to which they match consumer preferences will also have an impact on label uptake. Different consumers attach value to different aspects with respect to the kind of energy they purchase, as well as the profile of the company they purchase the energy from, including the investments of that company. Key aspects which are relevant to consumers are local sources, sustainability criteria and the price premium.	Depends on label	High price premium Option to exclude coal/ nuclear	Lower price premium (if no fund model) Cannot exclude coal/ nuclear operators	High price premium Option to exclude coal/ nuclear

¹⁴⁴ See <https://www.there100.org/>

Aspect	Impact	Baseline	1. New EU label	2. EU Ecolabel	3. Existing labels
			operators		operators
Stringency of award criteria & graded label	Similar to above, the level of stringency of the award criteria (and/or the option for a graded label) may impact level of uptake. Graded labels may allow for higher uptake, as combined, a premium and basic label can serve different market types and consumer needs in the EU.	Depends on label	Allows graded label	No graded label	Allows graded label
Eligibility of existing labels	The number of existing labels ¹⁴⁵ which are eligible to be recognised under option 3 as an “ <i>EU green energy label</i> ” or “ <i>compliant with EU green policy</i> ” will also impact uptake. This may lead non-recognised labels to lose credibility, possibly leading to a market shakeout and making it easier for consumers to identify labels “ <i>EU green energy labels</i> ”. However, existing labels have individual award criteria and governance structures which may need to be adapted to comply with the EU requirements. Minimum requirements will include EU-wide coverage; however, at the moment there is no label which fully covers the EU and EEA. Such a requirement would put a high burden on labels interested in being recognised, and risks having no existing labels apply for recognition. In order to improve these chances, some financial support could be made available allowing applying labels to fully cover the EU and the EEA.	Not applicable	Not applicable	Not applicable	High burden for existing labels to comply with EU requirement + potential loss of credibility for non-compliant labels
Eligibility of plants/suppliers to be labelled	The level of plants/suppliers eligible to be labelled may limit uptake. However, current projections for 2030 and 2050 expect large increase of RES in the energy mix. Therefore, we do not expect this to be a limiting factor for the label uptake (considering uptake levels will be well below 10% of energy consumption).	No impact	No impact	No impact	No impact
Overload of information for consumers	Creating an additional label may lead to an increased information overload for consumers. Ideally the use of an EU-wide label should not lead to proliferation of other labels but rather to ensure that existing labels are either aligned with the EU label requirements, or labels with less ambitious requirements are replaced by the EU label. In the EU Ecolabel Regulation (concerning option 2) there are some provisions for harmonisation with existing labels but they are quite soft. In any case, parallel instruments (such as those being introduced by the green claims and empowering of consumers initiatives) aimed at promoting better alignment	No impact	The graded label would be a new additional label on the market, but requirements on harmonisation	The EU Ecolabel is an existing label on the market, so it will not increase the total number of	This option will not require a new label as such, but the ‘EU recognition’ adds a new information

¹⁴⁵ Existing labels are well-established and highly valued by consumers, and often focus on one Member State or several MS in one region in Europe. They are often adapted to specific national or regional situations and cover particular interests of the MS or regional markets

Aspect	Impact	Baseline	1. New EU label	2. EU Ecolabel	3. Existing labels
	between the EU Ecolabel and other labels could be implemented.		of existing labels could be strengthened in the Regulation.	labels but rather the number of labels for this product group.	element to existing labels. Proper design and implementation should ensure reduction of information overload
GPP compatibility	Procurement of renewable energy is an important part of green public procurement and as such, compatibility with GPP could have an impact in label uptake. Harmonisation of label criteria (e.g. as proposed in option 3 for example) or an EU wide label (as in options 1 and 2) could make the case for labels in GPP for energy stronger. In chapter 5, the compatibility of the proposed award criteria with the PP legislation is assessed in more detail.	No impact	No impact as the basic standard is GPP compatible, but the premium standard might not be compatible.	No impact - Compatible in principle (difficult for fund model and supplier-specific criteria)	Might not be compatible with GPP guidelines

Based on the results of tasks 1 and 2 (see chapter 3 and 4), we conclude that a broad range of energy labels exist in Europe mainly addressing electricity, though often with a regional/national focus. All the labels analysed only cover a minor market share, well-below 1%, of total energy consumption in the countries where they are in principle applied.¹⁴⁶ Considering the current market uptake of energy labels, unless an EU-wide mandatory label is enforced, we expect limited uptake of an EU-wide label. Therefore, we have defined different uptake scenarios focusing on the demand for the new label and related changes in the market shares of labelled energy. These uptake scenarios serve as the basis for performing the following impact analysis. However, it is important to note that there may be an increase in uptake over time (e.g. switching from a low scenario in 2030 to a high scenario by 2050) due to the increasing share of new plants (build after RED II) and the decreasing cost of RES.

Table 7-3 Projections for renewable energy consumption in 2030 and 2050 for EU27 in TWh (baseline scenario)

Energy consumption (baseline)	2030 (TWh)	2050 (TWh)
Final electricity consumption	3 100	3 204
RES based electricity	2 356	-
Green label adoption scenarios		
Low Scenario: 0.5% labelled electricity	15.5	16.0
High Scenario: 2% labelled electricity	62.0	64.1

Sources: Based on SWD (2020) 176 - IA Stepping up Europe's 2030 climate ambition

Note: We focus on electricity given that the current energy labelling market and penetration shares are for renewable electricity. Additional labelling of renewable gas and heating & cooling may be considered, but this is expected to be marginal, at least in the period up to 2030.

If we compare the level of green label adoption against the increase from the RES current levels to those projected for RES based electricity in 2030, there is sufficient supply in the market to comply with the label requirements. It is important to note that here we consider all the electricity produced by renewable installations that is consumed as RES (rather than only energy labelled as renewable through labels or green tariffs).

It is important to note that the impact for **heating and gas** may differ from that on electricity. The current energy labelling market is almost non-existent, and a slow uptake would be expected in the case of an EU energy label. Currently, the information availability for gas consumers regarding the supply is limited. Therefore, there may be a higher uptake of green gas labels in the future (though there is high uncertainty due to the limited level of maturity of the market), as consumers may be more willing to go for an energy tariff that includes renewable gas for which the sustainable origin is guaranteed. This may also lead to a positive impact, with consumers driving more green gas demand than currently available. However, consumer information on the origin of the gas supply could also be achieved through the full uptake of a GO system in the gas sector, for which the foundations have been laid in RED II. In principle, 'green' gas GOs could provide the consumer with credible information on the renewable origin of the gas, without the involvement of a label.

¹⁴⁶ Bra Miljöval electricity label is an exception, with a market share of 2.6% in the addressed countries, and VSG/GazEnergie Clearinghouse Renewable Gases with a market share for biogas of 1.2% in Switzerland. The Austrian Ecolabel ("Österreichisches Umweltzeichen") is also an exception; having a market share of 38.1% of the private market (households), which accounted for 29% of the Austrian electricity consumption in 2019 (Statistik Austria, 2019).

However, the case for heat is different, as in most cases heat grids are regulated monopolies with one supplier. In this case, a green heat label may be of limited added value, as while it provides additional information it would not allow consumers to choose a (better) alternative.

Deployment of new/additional renewable energy

As mentioned in chapter 4, existing labels do not significantly affect the installation of additional renewable generation capacities. The direct investments from the fund models are limited (due to limited market share and label income per kWh). Additionality criteria often focus on targeting energy generated by new capacities; however, in many cases these RES projects would have been built regardless.

The additionality criteria proposed includes a distinction between basic and premium standards combining the supply and fund models (applicable for options 1 and 3) or the premium standard criteria focusing on the supply model and possibly the fund model (for option 2).

The **supply model** consists of ensuring a minimum percentage of supply (15% for basic standard and 33% for premium standard) from plants which became operational after the coming into force of the RED II, and which do not receive public support (as indicated on the GO). However, based on the impact assessment of existing labels, no supported investment has been identified so far from this model. Ideally, the introduction of an EU label broadly applicable across the EU27 should provide higher reliability and confidence in a *premium market* that - in combination with decreasing levelised cost of energy (LCOE) for RES - provides additional incentives for new and unsupported plants. However, due to the uncertainties it is difficult to assess to what extent this would actually take place. Therefore, the quantitative assessment is focused on the fund model.

The **fund model** can have a direct impact on new RES capacity deployment. The following analysis provides an overview of the additional renewable generation capacities which could be installed using direct investments from the fund models. The level of contribution to the fund will vary depending on whether the basic or premium standard is applied. Impacts for the basic standard will be on the lower side of the ranges presented while impacts for the premium standard will be on the higher end of the range. The RES capacity deployment will be highly dependent on the necessary support level for the various renewable energy sources. It is important to note, that these types of funds may to some extent undermine the GO scheme (which gives end-users the option to purchase the product they want and directly support producers) by gathering funds from end-users and redistributing in a top-down approach.

Box 7-6 Assumptions

- We expect contributions to the funds to range between 0.01-0.50 ct/kWh sold. This range is based on the contributions to existing funds from green energy labels.¹⁴⁷ We would expect the basic standard to have a contribution towards the lower end of the range and the premium standard on the higher end of the range;
- We assume all electricity sold contributes to the fund;
- We assume all funding is used solely for new installed capacity (though note that transaction costs should be excluded);
- We assume that the fund would contribute to renewable energy generation at the same level as current subsidy levels. We use an indicative PV subsidy of 52 EUR/MWh as a reference which considers the difference between

¹⁴⁷ Excluding the extremes of 0.94 ct/kWh and 0.005 ct/kWh .

LCOE and expected market values;¹⁴⁸ RES capacity will be highly dependent on the necessary support level for the various renewable energy sources. The subsidy is assumed to be provided for 8 years.

- 1 950 USD/kW for onshore wind (weighted average for Europe in 2018) and 1 113 USD/kW for PV (utility scale PV in Germany in 2018)¹⁴⁹ and an exchange rate of 0.9 EUR/USD. We assume that the fund model will have a leverage effect, whereby fund model investments *trigger* additional private investments, though this has not been quantified;
- Investment costs, as well as the gap between LCOE and market value, will decrease in the future due to decreasing LCOE values, however this is not reflected in the calculations due to additional uncertainty.

Table 7-4 Annual deployment of new/additional renewable energy from direct investments from the fund models (by 2030)

Scenario	Low	High
Labelled electricity in 2030 (TWh)	15.5	62
Fund contribution (Million EUR) (assuming all energy sold contributes to the fund)	-2 - 78	6 - 310
New installed PV (MW)	3 - 137	-11 - 549

This remains a rather small impact, especially if compared, for example, to the level of subsidies destined to renewable electricity at EU level, which was 73 billion Euros in 2018 (also covering R&D and technologies with low TRL levels)¹⁵⁰ or to the net additional wind and PV capacity installed, which was 8.4 GW and 7.7 GW respectively for the EU27 in 2018¹⁵¹.

The installed capacity will depend directly on the level of contribution to the fund model. The ranges remain wide, as we have assumed contributions to range between 0.01-0.50 ct/kWh sold, based on data from existing green energy label funds. This represents, **respectively, 0.05% to 2.4% of the average EU27 electricity prices for households (including taxes)**.¹⁵² While labels are currently aimed at households, it would be important to cater for industrial consumers as well in order to increase uptake. **For non-household consumers, the contributions would represent 0.4% to 4% of the average EU27 electricity prices.**¹⁵³ A contribution of 4% might have an inhibitory effect on large consumers, as this might increase their energy costs. As such, a distinction in contribution levels between different types of consumers could be considered.

It is also important to consider the **leverage** effect of the model fund by “triggering” additional investments. The **leverage ratio** is the ratio of total funding to public funding (from the fund model). The leverage ratio from this type of fund is lower if given to an operational RES power plant, as it would then probably replace private financing; while it is medium to high if the funds are allocated to projects during the development phase.¹⁵⁴ However, when the leverage ratio is really high, it is very

¹⁴⁸ Subsidy scheme for PV in the Netherlands. See https://www.pbl.nl/sites/default/files/downloads/pbl-2019-conceptadvies-sde-plus_plus_2020-basisbedragen-algemeen_3694.pdf
https://www.pbl.nl/sites/default/files/downloads/pbl-2019-voorlopige-correctiebedragen-2020-voor-de-sde-plus-plus_3830.pdf

¹⁴⁹ IRENA (2013), Renewable energy and jobs.

¹⁵⁰ Trinomics, Enerdata & Cambridge Econometrics (Forthcoming) Energy costs, taxes and the impact of government interventions on investments - Final report energy subsidies.

¹⁵¹ Eurostat [nrg_inf_epcrw]

¹⁵² Eurostat (2020). https://ec.europa.eu/eurostat/statistics-explained/index.php/Electricity_price_statistics

¹⁵³ *Ibid*

¹⁵⁴ DIE (2014). Public Instruments to Leverage Private Capital for Green Investments in Developing Countries.

doubtful whether the private investment is still additional or rather would have been realised anyway, just without the public funding.¹⁵⁵

One of the ways in which an EU-wide label applying a fund model could provide financial support is by making contributions to the EU Renewable Energy Financing Mechanism, which will start operations in 2021. In this way contributions from the label could support the financing of renewable energy projects that will count towards the union-wide renewables target or, depending on the interpretation of the law text even beyond the union wide target¹⁵⁶, but not counting towards the achievement of the national renewable energy targets stated in the NECPs. Under the right circumstances (some of) these investments could be additional to what would have been reached without support from the Financing Mechanism (for more info see Annex A).

Environmental: Greenhouse gases emissions

The level of GHG emissions avoided linked to the additional RES installations can be calculated using the projections for GHG emissions of the power sector in 2030. We assume that the new RES power plants would replace other non-RES power plants in the energy system, therefore we take the emission factor for non-RES power generation.

Box 7-7 Assumptions

- We assume a GHG emission factor for power generation of 0.17 t CO₂ eq/MWh in 2030 and of 0.62 t CO₂ eq/MWh for non-RES power generation.¹⁵⁷

Based on these estimates, we have calculated the tons of CO₂-eq avoided, which range from 19 tons at the low end of the range to up to 3.7 million tons at the higher end; compared to the 465 million tons which are projected for the EU power sector in 2030 according to the 2020 baseline scenario.¹⁵⁸

Table 7-5 GHG emissions avoided by supported RES generation in 2030 (kt CO₂-eq)

Scenario	kt CO ₂ eq
Low	19 - 931
High	75 - 3 724

It is important to note that in addition, there will be other environmental benefits, related to sustainability criteria (e.g. which can be included as part of the company specific criteria, or the eligibility and sustainability criteria). The impact of these criteria, however, has not been assessed as they have no direct impact on the objective of the intervention which is to promote the consumption of renewable energy coming from new installations. Overarching sustainability benefits are shortly discussed in Chapter 4 which assessed the impacts of existing green energy labels.

Social: Employment

The number of jobs created linked to the additional RES installations can be calculated using employment factor estimates. The impact varies widely depending on the level of contribution to the fund and therefore the additional installed capacity.

¹⁵⁵ *Ibid.*

¹⁵⁶ Seebach & Timpe (2020). Empowering green energy consumers in Europe to make a real difference.

¹⁵⁷ Calculated from SWD (2020) 176 - IA Stepping up Europe's 2030 climate ambition (Baseline scenario)

¹⁵⁸ SWD (2020) 176 - IA Stepping up Europe's 2030 climate ambition

Table 7-6 Employment factor estimates for different RES technologies (full-time jobs per MW)

	Manufacturing, Construction and Installation	O&M	Total assumed midpoint
PV	17.9 - 69.1	0.2-0.73	44

Sources: IRENA (2013), *Renewable energy and jobs*.¹⁵⁹

The employment generated ranges from around 120 new jobs per year to up to 24 000 under the most optimistic conditions. To put this in context, in 2018 in the EU there were over 300 000 jobs in wind power and over 100 000 in PV.

Table 7-7 Employment generated by additional installations in 2030

Scenario	Full-time jobs
Low	121 - 46 032
High	483 - 24 129

Consumer information

Transparency

Consumer information is pivotal to strengthen the role of consumers in the energy transition. Improving consumer information is part of the ongoing and upcoming processes and measures to improve EU consumer policies. Especially, the ongoing initiative to strengthen the role of consumers in the green transition addresses the topic of “*setting minimum requirements for sustainability logos & labels*”¹⁶⁰. The definition of the criteria and minimum requirements for an EU (graded) label for green energy and the corresponding official process for a continuing improvement have to be integrated and harmonised with this initiative.

As such, in the design of the three label options, attention has been paid to the availability of information on labels and supplier offers. Below (Table 7-8), we discuss the impact of the EU-wide green energy label option on consumer information by zooming in on different aspects of transparency (see also chapter 4). It is important to note that in general labels have no or limited impact on the way suppliers present their energy contracts (i.e. terms and conditions). The impacts discussed in the table below apply on electricity, gas and heating and cooling.

¹⁵⁹ See <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2013/rejobs.pdf>

¹⁶⁰ See <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12467-Empowering-the-consumer-for-the-green-transition>

Table 7-8 The expected impact of the three label options on transparency

Transparency on:	Current issue	Baseline	1. New label	2. EU Ecolabel	3. Existing labels
Contracts and billing	Consumers often experience difficulties in understanding all terms and conditions related to their energy contracts as well as the billing information and invoicing	No impact, as no specific award criteria addresses contract & billing (Except for ok-power label)	No impact, as no specific award criteria addresses contract & billing	No impact, as no specific award criteria addresses contract & billing	The increased uptake (as a result of being recognised by the EU) of the ok-power label (see chapter 3) could have a small positive effect on the billing information as this label requires the companies to provide their customers with fair and transparent contractual conditions.
Additionality (part of green energy tariffs)	Information should be transparent on if and how the consumer's money has been used to increase the capacity of renewable power plants in Europe's fuel mix as this information is often lacking	Not all labels provide information about their impact on the stimulation of new RES installations.	Although this criterion was not discussed in the design of the labels option (see chapter 6), we assume that this criterion is included in all the label options ¹⁶¹ .		
The impact on environment such as the fuel mix	Consumers have an incomplete knowledge on the fuel mix because some Member States have not yet implemented the minimum requirements on fuel mix disclosure as regulated in Art. 3(9) of the Internal Electricity Market Directive 2009/72/EC ¹⁶² . As such, a label should oblige suppliers to publish detailed fuel mix including the country of origin of GOs. Notably, for green gas, disclosure of the fuel mix is not mandatory. Since the deployment of renewable gases is still very limited and the introduction of 'green' gas contracts (mostly via compensation	Covered by most of the existing labels ¹⁶³	Increased provision of public information on the labelled products on the label's website (in order to empower consumers to independently verify a supplier's claim with respect to the label). This information should also contain transparent information on the geographical origin of the supplied energy. ¹⁶⁴ Especially for the energy carriers of gas and heating & cooling we expect an increase in consumer information due to missing functioning environmental labels.		

¹⁶¹ Under the condition that this criterion does not affect critical "market and competition" secrets

¹⁶² Cf. Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC, OJ L 211, 14.08.2009, p. 55.

¹⁶³ BEUC (2017). A 'Green Electricity' market that works for consumers - Policy recommendations.

¹⁶⁴ For electricity, at least on the level of country of production, for heat, on the level of the district heating grid concerned and for gas, at least on the level of country of production.

Transparency on:	Current issue	Baseline	1. New label	2. EU Ecolabel	3. Existing labels
	schemes) is relatively recent, the information on the origin and sustainability of the gas supply is less developed than for the electricity market.				
Governance system (including the setting of award criteria and review process including open stakeholder consultation and how feedback is taken up)	To ensure that consumers are actively involved in the energy transition and to make sure that consumers understand the award criteria.	Differs per label organisation and depending on the outcome of the Green Deal efforts on increasing consumer information and involvement ¹⁶⁵ , this criterion may also be marked as high impact in the future.	Increased transparency (i.e. definition of criteria, compliance with EU targets, etc.), integrated and harmonised to strengthen the role of consumers in the green transition specifically addresses the topic of “setting minimum requirements for sustainability logos & labels”.		

¹⁶⁵ As part of the empowering of EU consumers initiative

Visibility of green labels

There are two aspects that may determine the visibility of the Union wide green energy labels. These are the volume of labelled energy and the marketing and promotions efforts. As discussed above, there are three scenarios for the volume of labelled energy; low (0.5% labelled energy) and high (2% labelled energy). With a higher volume of labelled energy, the visibility of the label will increase (i.e. in the case of the high scenario).

In addition, the more the EU wide label is promoted and marketed in an attractive way, the more it will be visible to the consumer. As such, it is important to set up or intensify market information and campaigns that targets energy producers, suppliers and consumers. The Marketing Guide for the EU-Ecolabel for companies¹⁶⁶ is a good example of how to motivate energy producers and suppliers to increase the visibility of the Union wide energy label.

The marketing efforts for option 1 (new label) will be the highest among the three proposed options due to the need for acknowledgment and official support of a new label. The fact that a new label is introduced, will affect the visibility of the label. Option 2 (EU Ecolabel) will have medium marketing efforts as the label will be part of the relatively well-known EU Ecolabel and therefore the visibility will be better. As consumers are not very familiar with green energy labels (see also chapter 4), we expect that medium efforts would be needed to launch this label effectively. The last option (existing labels) will require high marketing efforts as this option also requires the marketing of the acknowledgment and official support for existing private labels. The baseline scenario will not require any marketing efforts.

Box 7-8 Potential indirect effects of an EU-wide label options.

Indirect effects of the three label options

While it is difficult to quantify indirect effects of the three label options, there is some evidence that a EU-wide label could have a positive impact on 1) consumer awareness, 2) Green Public Procurement, and 3) environmental legislation.

1. **Consumer awareness:** Some studies point out the positive effect of ecolabels on consumer awareness¹⁶⁷. Moreover, the study by UBA (2019) identified that an increase in number and variety of green offers in Germany led to higher awareness among consumers. As such, an EU-wide label, on top of the existing labels, could have a positive influence on consumer awareness. However, multitude of green energy labels may cause confusion among consumers and energy producers (see chapter 4);
2. **Green Public Procurement:** Labels can improve the process of green public procurement for energy by making it easier for procurers to include environmental criteria in procurement procedures (see chapter 4). Moreover, as procurers currently seem to have low awareness or have difficulties in understanding the complex issues related to additionality, labels may help overcome these issues and to ensure additionality. As such, one should not overlook the potential impact of a EU-wide label on increase uptake of GPP (see also Table 7-2);
3. **Pushing for more ambitious environmental legislation:** While the EU Ecolabel experiences a somewhat low uptake level¹⁶⁸, its sustainability criteria play a leading role in the design of environmental legislation. For instance, the Sustainable Product Initiative¹⁶⁹, which is part of the broader Circular Economy Action Plan of the Green Deal, will build, where appropriate, on criteria and rules established under the EU Ecolabel Regulation. An EU-wide label could also have a leading role in the formulation of further environmental legislation.

¹⁶⁶ See https://ec.europa.eu/environment/ecolabel/documents/marketing_guide_en.pdf

¹⁶⁷ Thøgersen, John, Pernille Haugaard, and Anja Olesen. "Consumer responses to ecolabels." European Journal of Marketing (2010).

¹⁶⁸ See <https://ec.europa.eu/environment/ecolabel/facts-and-figures.html>

¹⁶⁹ See <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12567-Sustainable-products-initiative>

7.3.4 Efficiency

Box 7-9 Summary of the efficiency criterion

Efficiency considers the relationship between the resources used by an intervention and the changes and impacts generated by the intervention (which may be positive or negative).¹⁷⁰ In this study, the focus is mostly on costs as we expect that the benefits (i.e. new/additional renewable energy achieved via the fund model) will be in line with the expected uptake level per label option (see section 7.3.3).

Key take-aways

Option 1 is the costliest option as the EU needs develop a new regulation, followed by option 3 as this option requires label organisations to adjust their governance structure and/or award criteria to be eligible. Option 2 is the least costly option as it can make use of the existing EU Ecolabel regulation and its governance structure. Moreover, the operational costs will mainly be allocated to the National Competent Bodies. As we expect a lower uptake of a new EU label (option 1) compared to the Ecolabel or existing labels (options 2 and 3), **option 2 is the most efficient.**

Distribution of labelling costs among stakeholders

The labelling costs will be distributed among stakeholders, depending on the governance option defined. The Table below (Table 7-9) provides an overview of the different costs¹⁷¹ per stakeholder to be assumed. It also includes an assessment of the impact on the cost for consumers and labelled suppliers.

Table 7-9 Summary of costs per stakeholder

Governance option	1. New EU label	2. EU Ecolabel	3. Existing label
Set-up costs	EU: To set up a new Regulation that is inspired by the existing EU Ecolabel Regulation, as well as defining award criteria	EU: Extending governance structure and defining award criteria	EU: Recognising labels and monitoring/evaluating label organisations at EU level Label organisations: Costs to adjust their governance structure and/or award criteria to be eligible
Operational costs (direct)	European Commission and Relevant bodies in the Member States	European Commission and National Competent Bodies	European Commission and Label organisations
Verification costs (direct)	The costs for verification can either be allocated to relevant bodies in the Member States or the suppliers third party certification	The costs for verification can either be allocated to National Competent bodies or the suppliers	Supplier
Operational costs including verification costs (indirect)	Consumer (price for labelled energy may increase due higher operation costs or fund model. This may be especially the case if the auditing costs are paid by the supplier (instead of the NCB) as this increases the labelling costs for the supplier)		
Compliance (including costs for being labelled) and administration costs	Supplier and energy producer to meet the new and more ambitious award criteria		

¹⁷⁰ Better Regulation Guidelines

¹⁷¹ We exclude the costs for meeting the award criteria of the label

Direct and indirect costs for establishing/operating the label

In this section, we map the direct and indirect costs for each label option:

- **Direct costs:** The costs for the label organisation, directly incurred due to the new label. These costs include administration and outsourcing costs, as well enforcement and monitoring costs;
- **Indirect costs:** Affect parties such as renewable energy producers, consumers (included GPP officers) and suppliers, and include compliance costs.

The setup and operational costs per option will differ based on the governance structure as described below.

Table 7-10 Summary of the costs per governance option.

Costs	1. New EU label	2. EU Eco Label	3. Existing labels
Costs for setting up governance structure	Medium to high - EU to set up a new Regulation and award criteria which allow for a graded label	Low - EU as there is a governance structure in place. A major effort would nonetheless be required for defining the award criteria, and for introducing the label to the market	Medium - EU Recognising labels and monitoring/evaluating label organisations at EU level Medium - Label organisations: Costs to adjust their governance structure and/or award criteria to be eligible
Cost for implementation & running of the label (including administration costs)	Medium to high - medium costs for the EU, high costs for Relevant bodies in the Member States	Medium - low costs for the EU, high costs for the NCB	Medium - costs for the EU (supervision and monitoring), and label organisations (annual report and an application every 5 years)
Costs for verification (indirect costs)	Medium - Relevant bodies in the Member States/third parties: ex ante and ex-post audits on yearly basis	Medium - NCB/third parties: ex-ante and ex-post audits on yearly basis	Medium - Label organisation/ third parties
Costs for promoting	High - requires additional marketing efforts for the introduction, perception and acceptance of new label all over Europe	Medium - Need for marketing efforts, can build on Ecolabel perception and ongoing promotion	High - marketing support for the EU-wide recognition of the private labels, e.g. by officially promoting and listing the recognised private labels on websites, social media, PR campaigns and publications of the EU in each Member State.
Compliance costs (including administrative burden) (indirect costs)	High - energy producer and supplier, especially to meet the premium standard award criteria. Premium criteria can also increase the premium price of green energy for the consumer	Medium - energy producer and supplier. Low costs for consumers in case fund model is not applicable for this option.	Medium - energy producers and suppliers (although it could be appropriate to allow labels also to apply technically different criteria at least with respect to additionality)

As presented in Table 7-10, Option 1 is the costliest option as the EU needs set up a new Regulation. Option 1 also involves high marketing costs for the acknowledgment and official support of a new official label. The label also comes with an ambitious set of award criteria which can increase the compliance costs for suppliers (supplier criteria) and energy producers which can be translated in a price increase for consumers.

Option 3 is the next costliest option as it requires label organisations to adjust their governance structure and/or award criteria to be eligible. We foresee that this would require relatively large investments for these label organisations. This option also requires additional marketing efforts from the EU and label organisations. Once the governance structure for this option is set up, it will involve low operational costs for the EU.

Option 2 is the least costly option as it can make use of the existing governance structure of the EU Ecolabel. Moreover, the operational costs will mainly be allocated to the NCB.

7.3.5 EU added value

Box 7-10 Summary of the EU added value criterion

EU added value looks for changes which it can reasonably be argued are due to the EU intervention over and above what could reasonably have been expected from national actions by Member States. In many ways, the evaluation of EU added value brings together the findings of the other criteria, presenting the arguments on causality and drawing conclusions, based on the evidence to hand, about the performance of the EU intervention and whether it is justified. This aspect should respond to a subsidiarity analysis.¹⁷²

Key Take-aways

- The added value of having an EU-label in addition to the existing private labels that are active in the market is questionable, as the extent to which the ‘EU Stamp’ has a positive impact on label credibility and uptake is disputed;
- The extent to which a single EU-label will be in line with the diversity of consumer preferences across EU Member States is expected to be limited.

The value added that the EU can have in the energy labelling market mostly lies in the credibility of the labels and the harmonisation of eligibility criteria across countries and the way in which the sustainability of the energy sold is ‘proven’ to the consumer. With respect to the latter the EU has already reached a high level of standardisation through the GO system. The impact of an EU-wide label on the credibility of the label and the comparability of labels across countries and the associated impact on label impact is expected to differ per label option, as discussed in the next paragraphs.

Credibility

Although giving more flexibility than the inclusion of energy products under the EU Ecolabel, the establishment of a new EU label for green energy products (option 1) will need to go hand in hand with significant information and marketing campaigns to make it well-known. In the short term, the credibility of such a label is unlikely to exceed the credibility of existing third-party labels in the energy markets.

¹⁷² Better Regulation Guidelines

The advantage of the inclusion of the EU Ecolabel (option 2) is that it is already relatively well established in the market. Still, having the 'EU stamp' does not necessarily translate into higher market uptake. A study on the impact of the EU Ecolabel in the Spanish market reveals that the diffusion of products with the EU ecolabel in the market is limited, in part due to competition with existing third party labels in the market.¹⁷³ Another study shows that although companies acknowledge the added value of having their products labelled under the EU Ecolabel, they also state that the impact of the label on their product sales is lower than expected, which they assume to be due to a lack of familiarity of consumers with the EU Ecolabel.¹⁷⁴ From these findings on the uptake of existing products with an EU Ecolabel, it can be concluded that the impact of the 'EU identity' in ecolabelling on market uptake seems to be limited.

Existing labels are well-established and highly valued by consumers, and often focus on one Member State or several MSs in one region in Europe. They are often adapted to specific national or regional situations and cover particular interests of the MS or regional markets. However, existing labels have individual award criteria and governance structures. Therefore, setting minimum requirements as well as basic/ premium award criteria at EU level, and recognising existing labels as compliant (option 3) may to a limited extent enhance the credibility of these labels in the eyes of the consumers. This could have a positive impact on the market share of such labels, but the number of existing labels complying with all the selected requirements seems to be very limited. Furthermore, it may reduce the application of non-recognised labels based on market forces as consumers may prefer the EU-recognised labels.

Harmonisation of criteria and the variety of consumer preferences

In many areas, the added value of EU interference in markets is to harmonise the market conditions in order to safeguard fair competition and remove barriers for market entry. However, in the context of labels there is a trade-off between standardisation and differences in consumer preferences across markets. The advantage of existing green energy labels is that they are well adapted to the consumer demands in specific markets. Removing market-specific criteria or preferences (e.g. exclusion of nuclear energy) could hamper the trust of consumers in that label and thus decrease uptake instead of increasing it. In Germany, the government did attempt to come up with a single green energy label, by combining the eligibility criteria of the different labels in the market. However, in the end they were not able to reach consensus on what the final set of eligibility criteria should be as different labels are targeting different consumer groups with different, sometimes even opposing preferences regarding e.g. the geographical source of the energy or the energy technologies considered, the profile of the energy companies providing the energy, etc. The inability to find a single label that addresses the preferences of the consumer within one country illustrates how difficult this will be at the EU-level, where consumer preferences differ even more strongly.

Impact on information provision relating to renewable heat and gas

As shown throughout this study, the activities of existing labels are often limited to the electricity market, whereas only a limited number of labels provide consumers with options for labelled gas tariffs or heat contracts. In this area an EU-wide label could bring in additional value by informing the

¹⁷³ Prieto-Sandova *et al.* (2019). Challenges for ecolabeling growth: lessons from the EU Ecolabel in Spain. *The International Journal of Life Cycle Assessment* (2020). 25:856-867

¹⁷⁴ Iraldo & Barberio (2017). Drivers, barriers and benefits of the EU Ecolabel in European Companies' perception. *Sustainability* 2017, 9(5), 751;

consumer better on the existence of renewable gases and by establishing a credible sustainability standard for these. Together with the roll-out of GOs for renewable gases, an EU-wide green label can contribute to the awareness of and demand for renewable gases. In principle, a label could also play a role in heat markets, but with the current setup of most district heating & cooling networks that mostly have a single monopoly supplier, labels would be of limited use since consumers often do not have an alternative but to take the heat from the supplier. As such, a label will only add value to heating and cooling markets, when the level of competition is increased in these markets.

7.4 Comparison of green label options

In this section, we summarise the key messages for each impact criterion and compare the outcomes for the three label options. As illustrated in the Comparison Table (Table 7-11) below, in terms of **relevance**, the three label options are regarded as relevant as each option contributes to consumer information and - to a limited extent given the voluntary nature of the label tool - the consumption of energy coming from new installations, addressing the problems identified in chapter 2.1.

In terms of **coherence**, the EU Ecolabel (option 2) is most coherent with the existing policy framework as it builds upon an existing EU tool. Zooming out on the question of whether energy labels are coherent with the existing policy framework, one could argue that an EU-wide energy label is ‘another channel’ (compared to rankings from NGOs for instance) to inform consumers about their purchase as other market players also have access to information included in GOs. However, as labels have not created tensions with other policy frameworks and as there is still a need to increase the transparency on the origin of the energy supplier and the supplier itself, we conclude that green labels are coherent with the existing policy framework.

From a broader perspective, creating an EU green energy label is coherent with the objectives and parallel initiatives under the European Green Deal.¹⁷⁵ In particular an EU green energy label would support the empowerment of consumers in the decarbonisation of the energy sector.

The scoring of the **effectiveness** criterion is based on the performance of the label options on the following three indicators:

1. Green label adoption (uptake);
2. Deployment of new /additional renewable energy production capacity (and related employment generation and GHG emission reduction); and
3. Consumer information.

It is important to note that in addition, there will be other benefits, for example related to sustainability, which have not been assessed, as they have no direct impact on the objective of the intervention which is to promote the consumption of renewable energy coming from new installations. Sustainability benefits are shortly discussed in chapter 4 which assessed the impacts of existing green energy labels.

We expect that the general uptake level of the three label options will remain low given the voluntary nature of the schemes (under 2% of the final energy consumption), a lower uptake level for option 1 (new label) - at least in the first few years - compared to options 2 (EU Ecolabel) and 3 (existing

¹⁷⁵ COM (2019) 640

labels), since the latter already have a certain uptake level and a new label would need to start from scratch. This study does not provide an estimation or assessment of the potential market share, given the large uncertainties in this regard, but rather proposes to use the uptake of existing labels as a starting point given the similar nature of the proposed scheme. It should be noted, however, that the current market uptake of green energy labels in the EU overall is well below 1%. Regarding the deployment of new/additional renewable energy, it is only possible to quantify the impact of the fund model. The level of contribution to the fund will vary depending on whether the basic or premium standard is applied with higher impacts for the premium standard. The fund model could lead to additional RES generation capacity, new jobs and avoided GHG. The size of the impacts would depend on the level of contribution to the model (but would be the same across the three governance options). However, the additional contribution from the fund model remains limited, especially if compared, for example, to the level of subsidies provided for renewable electricity at EU level.

The supply model was excluded in the analysis as no impact has been identified for existing labels and there are too many uncertainties. However, it is important to note that the proposed supply model criteria aim to increase reliability and confidence in a *premium market* that - in combination with decreasing levelised cost of energy (LCOE) for RES - could provide additional incentives for new and unsupported plants.

In terms of consumer information and transparency, all three label options improve the consumer information by increasing the transparency on 'additionality information', 'the impact on environment such as the fuel mix' and 'the governance system'. Thus, all label options have a medium impact on this effectiveness dimension, with option 1 (new label) having a slightly lower uptake level compared to the other 2 options and option 2 (EU Ecolabel).

For the subsequent criterion of **efficiency**, option 1 is the costliest option as the EU need to set up a new EU Ecolabel regulation to allow for the graded label, followed by option 3 which is regarded as slightly less costly both the EU and the label organisations need to invest to define the award criteria and to implement and monitor these effectively over the years. Option 2 is the least costly option as, similarly to option 1, it can make use of the existing governance structure of the EU Ecolabel, but no new EU Ecolabel Regulation is needed. Once the criteria are developed and adopted by the European Commission, the operational costs will mainly be allocated to the National Competent Bodies. In terms of benefits (i.e. new/additional renewable energy achieved via the fund model) we expect a higher uptake for options 2 and 3 compared to option 1, which makes option 2 the most efficient.

On the last criterion of **EU added value** all label options score medium as the added value of having an EU-label in addition to the existing private labels that are active in the market is questionable as the extent to which the 'EU Stamp' has a positive impact on label credibility and uptake is disputed. Moreover, the extent to which a single EU-label will be in line with the diversity of consumer preferences (e.g. local source of the energy, energy technologies considered, the profile of the energy companies providing the energy, etc.) across EU Member States is expected to be limited.

Based on the analysis of all impacts presented, option 2 of an EU Ecolabel, is the preferred option.

It is important to note that our approach had several limitations which should be discussed before presenting our final conclusion and recommendations. As indicated in Table 7-1, some indicators are

analysed quantitatively (e.g. uptake levels, additionality, GHG emissions) and others qualitatively (e.g. relevance, coherence, added value indicators). The quantitative analysis is based on several assumptions that we base on historical data (see chapter 4) and our expert opinion. In addition, we have discussed our assumptions and results with the focus group to validate our conclusions.

However, as we have based our assessment mostly on how the market currently functions (for instance for energy carriers and also for different technologies), we cannot be sure that our conclusions will satisfactorily reflect the market situation in the coming years, given the dynamic nature of the energy market during these times of transition. Due to these uncertainties in our assessment, the robustness of our conclusions is limited. The conclusions regarding the qualitative analysis are also based on our expert opinion and discussed with the focus group to increase the internal validation of our study. However, the conclusions for these indicators can be regarded as less robust, as certain assumptions about interactions with other labels or the development of certain policies can change in the future. were developed in detail (for instance the graphical design and the campaign/communication strategy),

As such, we want to highlight that this impact assessment should be seen as a preliminary analysis of the impacts trying to account for the large range of uncertainties to the extent possible. In case the Commission wishes to further consider the development of an EU-wide energy label, a more elaborate impact assessment - including the design of concrete policy options - needs to be conducted. In this assessment, we advise specifying the label options' communication strategy to the consumer and to tests these strategies in real life (on consumers) to learn if the communication is noticed, understood and actively used by consumers in their decisions.

Table 7-11 Summary of the impacts per label option

Impact aspect	1. New EU label	2. EU Ecolabel		3. Existing labels
Relevance				
Coherence				
Effectiveness		Fund model included	Without fund model	
Efficiency: Label costs				
EU added value				

Green = positive impact or low costs, *yellow* = medium/neutral impact or costs, and *red* = limited or negative impact or high costs. For the latter, we have applied different tints/shades to bring some nuances into the Table. For instance, option 1 was given *dark red* for efficiency as this option is slightly more costly than option 3.

The different label options are compared against the counterfactual using the assessment criteria and impacts identified above. As illustrated in the Comparison Table below (Table 7-12), the baseline scores lower than the label options on relevance as we expect that an EU-wide label is more relevant to tackle the identified problems that exist across the Member States. The baseline scores high on coherence as it is in line with the current policy framework. Moreover, the baseline scores medium on effectiveness as the current private labels have shown in the chapter 4 to have a limited impact on the deployment of additional renewable energy capacities. Compared to the baseline, the three label options (being on top of the existing labels) are expected to have a larger impact on the production of energy from newly installed installations, even though this will be very dependent on the market uptake of the label. However, it is important to note that the difference is marginal compared to the baseline. There is also a risk that the credibility of non-labelled green energy tariffs will suffer from any type of an EU-wide green label. Compared to the baseline, the three options are more expensive due to the fact that

governance structures need to be installed or adapted. In comparison to the baseline, one can argue that there is a risk that the set-up costs of an EU-wide label are higher than its benefits. For this reason, we score the efficiency of the three label options as lower than the baseline. Moreover, we expect the label to be cost-effective in the high uptake scenario (2%) and in combination with the high level of contribution to the fund model (i.e. for the example with PVs as presented in Table 7-4).

Compared to the baseline, the three label options have medium added value as the EU-wide label will address the perceived need for increasing consumer information in markets (gas and heating and cooling) which are not sufficiently addressed with the existing labels. However, this positive impact will only materialise when flanking measures are implemented that increase the renewable gas supply and a reliable and harmonised system is implemented to track renewable gas flows (e.g. a GO system). Moreover, the extent to which a single EU-label will be in line with the diversity of consumer preferences across EU Member States is expected to be limited.

Table 7-12 Overview of the impacts per label option against the baseline

Impact aspect	Baseline	1. New EU label	2. EU Ecolabel		3. Existing labels
Relevance					
Coherence					
Effectiveness			Fund model included	Without fund model	
Efficiency: Label costs					
EU added value					

Green = positive impact or low costs, **yellow** = medium/neutral impact or costs, **red** = limited or negative impact or high costs and **grey** = no information available. For the colour red, we have applied different tints/shades to bring some nuances into the Table. For instance, option 1 was given **dark red** for efficiency as this option is the costliest, followed by option 2.

8 Conclusions and recommendations

Based on the comparison, we conclude that the option for an EU Ecolabel (option 2), including fund model, is the preferred option. Compared to the baseline, this option shows marginal improvements in e.g. on uptake levels and the deployment of new installations. This options also is the most coherent option as it builds upon an existing EU tool and it is the most efficient option among the three options.

Uptake levels for all options could be increased by using supporting measures such as information campaigns and GPP related measures. Especially the use of the EU-wide label in GPP could boost the positive impacts on e.g. additionality. However, in the most likely uptake scenarios for the EU-wide label (i.e. the low scenario) there is a risk that all options for an EU-wide label is not cost-effective. As such, sticking to the baseline in combination with some other measure(s) to strengthen the existing policy framework, becomes a serious option to consider.

When an EU-wide label is to be implemented, it is important to implement sufficient flanking measures (e.g. awareness campaigns) to boost the label uptake as much as possible. Also, in order for the label to make a significant contribution to renewable energy deployment, it is important that the level of the fund contributions (per energy unit consumed) is set sufficiently high. At the same time, one might want to consider discriminating between households and industrial consumers when setting the fund contribution levels to prevent that the energy costs increase to sharply in the case of industrial consumers. The study also found that the market for renewable electricity is much more mature and developed than the market for renewable gases and renewable heat. As such, an EU-wide green label could have a larger added value in those markets, by creating awareness and providing consumers with a credible guarantee on the sustainable origin of the energy they buy. However, for an EU-wide label to make a meaningful contribution in these markets, some other policies are required in parallel:

- **District heating:**
 - Today, district heating networks are often still only connected to a single (monopolistic) supplier. Since labelling is only relevant in the context where consumers can choose between different options, it is important that policy action is undertaken to increase competition in district heating markets (e.g. through 3rd party access).
- **Renewable gases:**
 - Currently, most of the biogas produced is used for electricity generation and not upgraded to biomethane and fed into the grid. Effective green gas contracts will rely on sufficient supply of renewable gas in the market. Therefore, policy support is needed to increase the biogas production capacity and promote biogas upgrading. This also requires addressing some economic as well as infrastructural barriers;
 - In order for a label to effectively proof the sustainable origin of renewable gases, it is important that a reliable accounting system such as a Guarantee of Origin system for renewable gases (which is currently under development) is fully rolled out across Member States.

Even though the implementation of an EU-wide green energy label could bring some benefits (including indirect benefits on e.g. consumer awareness as described in Box 7-8), there is a considerable risk that a label will not be a cost-effective instrument for promoting renewable energy deployment, when the uptake levels remain too low. Therefore, sticking to the baseline situation, while strengthening some existing policy instruments is a serious option to consider. Several measures could help to address the problems identified in the intervention logic (see section 7.1). In section 7.2.3 we introduced some

alternatives to strengthen the current policy framework and the consumer information tools, which we summarise below:

- Continued financial support for renewable generation to bridge the gap between LCOE and market prices. Options for consumers to contribute to such funds outside of a label (e.g. through setting up a GOplus system¹⁷⁶) could also be considered¹⁷⁷;
- Expansion of disclosure obligations for suppliers, e.g. inclusion of country of origin and installation age in green energy tariffs;
- Introduction of full disclosure for grey energy tariffs, e.g. through the expansion of the GO system to include all energy sources, as this can improve the awareness of people with grey tariffs on the origin of the energy supplied to them;
- A robust roll-out of an effective GO system for renewable gases. Green energy labels could help creating more awareness about green gas, but a verification system such as a GO system for renewable gases are a prerequisite to set up credible and reliable green gas tariffs;
- Provision of additional information on supplier involvement in fossil-based generation or investments could also improve consumer information and enable more well-advised purchasing decisions when it comes to energy tariffs;
- Promotion of energy offers where physical energy purchases or production by the supplier are linked with the GOs.

The EU can also play a role in supporting existing green labels and other consumer information tools in order to increase their impact on increasing renewable energy consumption from additional installations by, for example:

- By requiring suppliers to disclose information on their physical electricity procurement, generation activities and investments;
- Promoting the creation and use of ranking tools such as the ‘green electricity supplier ranking’¹⁷⁸ done by the Dutch Consumer Association together with other NGOs, which use GO and supplier information to increase consumer awareness and guide consumers in tariff selection;
- Providing guidelines and/or best practices on additionality criteria with the most impact for adoption by existing green energy labels;
- Further promoting Green Public Procurement for green energy as well as to increase the ambition of GPP criteria. In addition, it could be considered to make GPP mandatory.

¹⁷⁶ Seebach & Timpe (2020). Empowering green energy consumers in Europe to make a real difference

¹⁷⁷ However, such an option would need to be tested with consumers to ensure they are aware of the distinctions and implications.

¹⁷⁸ See (in Dutch) <https://www.consumentenbond.nl/energie-vergelijken/de-groenste-energieleverancier#no8>

References

- ACM (2020). Stroometiket: groene en grijze energie. Autoriteit Consument & Markt. Available at: <https://www.acm.nl/nl/onderwerpen/energie/energieleveranciers/stroometiket/stroometiket-groene-en-grijze-energie> accessed at 3 July 2020
- BEUC (2017). Energy markets of the future: how the EU's energy transition should work for consumers BEUC policy paper. Available at: https://www.beuc.eu/publications/beuc-x-2017-062_mst_energy_markets_of_the_future_-_how_the_eus_energy_transition_should_work_for_consumers.pdf
- BEUC (2017). A 'Green Electricity' market that works for consumers - Policy recommendations. Available at https://www.beuc.eu/publications/beuc-x-2016-114_jmu_a_green_electricity_market_that_works_for_consumers.pdf
- BEUC (2017). Stalling the switch: 5 barriers when consumers change energy suppliers. The European Consumer Organisation Bureau Européen des Unions de Consommateurs (BEUC). Available at: https://www.beuc.eu/publications/beuc-x-2017-106_stalling_the_switch_-_5_barriers_when_consumers_change_energy_suppliers.pdf accessed 2 March, 2020.
- Bouwer M, Jonk M, Berman T, Bersani R, Lusser H, Nappa V, Nissinen A, Parikka K, Szuppinger P and Viganò C, (2006). Green Public Procurement in Europe 2006 - Conclusions and recommendations. Virage Milieu & Management bv, Korte Spaarne 31, 2011 AJ Haarlem, the Netherlands. Available at: https://ec.europa.eu/environment/gpp/pdf/take_5.pdf
- BRE (2011). Green Public Procurement - Electricity - Technical Background Report. Available at: https://ec.europa.eu/environment/gpp/pdf/tbr/electricity_tbr.pdf
- Castka P and Corbett C (2015). Governance of Eco-Labels: Expert Opinion and Media Coverage, Journal of Business Ethics 135(2). DOI: 10.1007/s10551-015-2542-3
- CE Delft (2016). Factsheet: ontwikkeling prijzen garanties van oorsprong. Available at: <https://www.ce.nl/publicaties/download/2124>
- CEER (2018). Status Review of Renewable Support Schemes in Europe for 2016 and 2017. Available at: <https://www.ceer.eu/documents/104400/-/-/80ff3127-8328-52c3-4d01-0acbdb2d3bed>
- CEER (2019). Monitoring Report on the Performance of European Retail Markets in 2018. Available at: <https://www.ceer.eu/documents/104400/-/-/5c492f87-c88f-6c78-5852-43f1f13c89e4>
- DIE (2014). Public Instruments to Leverage Private Capital for Green Investments in Developing Countries. Available at: https://www.die-gdi.de/uploads/media/DP_4.2014.pdf
- EBA (2019). EBA Statistical report 2019: European Overview. Available at: <https://www.europeanbiogas.eu/eba-statistical-report-2019-european-overview/> accessed on 1 November, 2020
- ECN (2017). Definitieve correctiebedragen 2016 (SDE+). Available at: <https://www.rvo.nl/sites/default/files/2018/03/Notitie%20Definitieve%20correctiebedragen%202017%20-%20SDE.pdf>
- ENTSO-G (2017). Ten-Year Network Development Plan 2017. Available at: https://www.entsog.eu/sites/default/files/files-old-website/publications/TYNDP/2017/entsog_tyndp_2017_main_170428_web_xs.pdf.
- European Commission (2014). Electricity market liberalisation. Available at: https://ec.europa.eu/energy/content/electricity-market-liberalisation_en

- European Commission (2014). Study on the coverage, functioning and consumer use of comparison tools and third-party verification schemes for such tools. By ECME in partnership with Deloitte. Available at: https://ec.europa.eu/info/sites/info/files/final-report-study-on-comparison-tools_en.pdf
- European Commission (2016). Second consumer market study on the functioning of the retail electricity markets for consumers in the EU. Available at: http://ec.europa.eu/newsroom/document.cfm?doc_id=42263
- European Commission (2016). Buying green! A handbook on green public procurement 3rd Edition. Available at: <https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf> accessed 3 March, 2020
- European Commission (2016), EU Reference scenario 2016. Available at: https://ec.europa.eu/energy/data-analysis/energy-modelling/eu-reference-scenario-2016_en
- European Commission (2019), COM (2019) 640, The European Green Deal. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52019DC0640>
- European Commission (2019). Competitiveness of corporate sourcing of renewable energy; Part 2 of the Study on the competitiveness of the renewable energy sector; Final report; ENER/C2/2016-501; Brussels, 28 June 2019
- European Commission (2019). environment, Green Public Procurement: Barriers to the take-up of GPP. Available at: https://ec.europa.eu/environment/gpp/barriers_en.htm
- European Commission (2020), SWD(2020) 176, IA on Stepping up Europe's 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020SC0176>
- European Commission and ICLEI (2016). Buying green! A handbook on green public procurement 3rd Edition. ICLEI - European Commission and Local Governments for Sustainability, supported by Public Procurement Analysis (PPA). Available at: <https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf> accessed 3 March, 2020.
- Eurostat (2020) Electricity prices components for non-household consumers - annual data.
- Eurostat (2020) Electricity production capacities for renewables and wastes[nrg_inf_epcrw].
- Fischer and Lyon (2013). A Theory of Multi-Tier Ecolabels.
- Hermann A (2019). Rechtsgutachten umweltfreundliche öffentliche Beschaffung Aktualisierung Februar 2019 (UBA-Texte 30/2019). Available at: <https://www.umweltbundesamt.de/publikationen/rechtsgutachten-umweltfreundliche-offentliche>
- HIER (2020). 40% Nederlanders wil groene stroom uit Nederland. Available at: <https://www.hier.nu/themas/nieuws-voor-professionals/40-nederlanders-wil-groene-stroom-uit-nederland>
- ICLEI (2016). The Procura+ Manual: A Guide to Implementing Sustainable Procurement. 3rd edition. Available at: https://procuraplus.org/fileadmin/user_upload/Manual/Procuraplus_Manual_Third_Edition.pdf
- Ihamäki, V., van Ooij, E., & van der Panne, S. (2014). Green public procurement in the European Union and the use of eco-labels.
- Iraldo & Barberio (2017). Drivers, barriers and benefits of the EU Ecolabel in European Companies' perception. Sustainability 2017, 9(5), 751; <https://doi.org/10.3390/su9050751>

- Iraldo F, Griesshammer R and Kahlenborn W (2020). The future of ecolabels. The International Journal of Life Cycle Assessment 25, 833.
- IRENA (2013), Renewable energy and jobs. Available at: <https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2013/rejobs.pdf>
- Joint Research Center (2019). Development of EU Ecolabel criteria for Retail Financial Products. (Draft) Technical Report v1.0: Draft criteria proposal for the product scope and ecological criteria. Available at: https://susproc.jrc.ec.europa.eu/Financial_products/docs/20190315%20TR%201.0%20EU%20EL%20Financial%20Products_Final%20consultation.pdf.
- Lenaerts K and Gutiérrez-Fons J A (2013). To Say What the Law of the EU Is: Methods of Interpretation and the European Court of Justice. EUI Working Paper AEL2013/9. Available at: https://cadmus.eui.eu/bitstream/handle/1814/28339/AEL_2013_09_DL.pdf?sequence=1&isAllo wed=y.
- Öko-Institut, IFZ, IT Power Ltd., Politecnico di Milano, Dipartimento di Energetica (eERG). WWF, CLER, SSNC, ÖÖI and Ecofys (2007). " Green power labelling: An instrument to enhance transparency and sustainability on the voluntary green power market. Final Report from the project "Clean Energy Network for Europe (CLEAN-E)". Available at: <https://www.oeko.de/oekodoc/1480/2007-230-en.pdf>
- PBL (2019), CONCEPTADVIES SDE++ 2020. Overzicht basisbedragen en algemene parameters en uitgangspunten. Available at: https://www.pbl.nl/sites/default/files/downloads/pbl-2019-conceptadvies-sde-plus_plus_2020-basisbedragen-algemeen_3694.pdf
- PBL (2019b), VOORLOPIGE CORRECTIEBEDRAGEN 2020 VOOR DE SDE++. Available at: https://www.pbl.nl/sites/default/files/downloads/pbl-2019-voorlopige-correctiebedragen-2020-voor-de-sde-plus-plus_3830.pdf
- Ortlieb B (2013). Vergaberechtliche Aspekte bei der Beschaffung von Ökostrom.
- PricewaterhouseCoopers, Significant and Ecofys (2009). Collection of statistical information on Green Public Procurement in the EU Report on data collection results. Available at: https://ec.europa.eu/environment/gpp/pdf/statistical_information.pdf
- Prieto-Sandoval et al. (2019). Challenges for ecolabeling growth: lessons from the EU Ecolabel in Spain. The International Journal of Life Cycle Assessment (2020) 25:856-867. <https://doi.org/10.1007/s11367-019-01611-z>.
- RECS International (2019). Development of the guarantees of origin MARKET 2009-2018. Available at: https://www.recs.org/assets/doc_4465.pdf
- Renda, A., Pelkmans, J., Egenhofer, C., Schrefler, L., Luchetta, G., and Selçuki, J., (2012). The Uptake of Green Public Procurement in the EU 27, Centre for European Policy Studies and College of Europe. Available at: <https://ec.europa.eu/environment/gpp/pdf/CEPS-CoE-GPP%20MAIN%20REPORT.pdf>
- Sammer and Wüstenhagen (2005). The Influence of Eco-Labeling on Consumer Behaviour - Results of a Discrete Choice Analysis. Available at: https://www.alexandria.unisg.ch/4941/1/A07_Sammer_Wuestenhagen_BSE_2006.pdf
- Seebach & Timpe (2020). Empowering green energy consumers in Europe to make a real difference. Available at: <https://www.oeko.de/publikationen/p-details/empowering-green-energy-consumers-in-europe-to-make-a-real-difference>.
- Statistik Austria (2019). Umweltbedingungen, Umweltverhalten 2019: Ergebnisse des Mikrozensus

- Swedish Environmental Protection Agency (2013). Green Public Procurement A tool for achieving national environmental quality objectives. Report 6600.
- Thøgersen, John, Pernille Haugaard, and Anja Olesen. "Consumer responses to ecolabels." *European Journal of Marketing* (2010).
- Trinomics (Forthcoming). Report on literature review and stakeholder interviews regarding the representation and implications of the financing challenge.
- Trinomics, Enerdata & Cambridge Econometrics (Forthcoming). Energy costs, taxes and the impact of government interventions on investments - Final report energy subsidies.
- Umweltbundesamt (UBA) (2019). Marktanalyse Ökostrom II: Marktanalyse Ökostrom und HKN, Weiterentwicklung des Herkunftsnachweissystems und der Stromkennzeichnung (Climate Change No. 29/2019).
- Willstedt, H. & Bürger, V. (2006). Overview of existing green power labelling schemes: WP 1 report from the CLEAN-E project. A report prepared as part of the EIE project "Clean Energy Network for Europe (CLEAN

Annex A - Additionality through the Renewable Energy Financing Mechanism

Box A-1 Additionality through the Renewable Energy Financing Mechanism

Objectives of the financing mechanism

The establishment of an EU Renewable Energy Financing Mechanism is part of the Energy Union Governance Regulation (2018/1999), with the aim to (1) create an enabling framework for renewable energy investments by reducing the cost of capital and (2) to provide Member States that fall short of their Renewable Energy target with a possibility to realise renewable energy deployment at the EU level.

Functioning of the financing mechanism

The mechanism will support renewable energy projects in host Member States or Third countries through auctions. Support will be provided in the form of investment support or operational support and the funding will be allocated to the projects that bid at the lowest cost or premium per unit of energy provided (the most cost-efficient projects). Tenders can be technology-neutral, cover multiple technologies or technology-specific.

There are two basic forms of financing in the mechanism, but a combination of the two is possible as well. The first form of financing concerns direct financing from a contributing Member State. In this case the statistical benefits in terms of renewable energy generated (counting for national RE targets) are divided between the contributing and host Member State in a ratio agreed upon by the Member States and laid down in the call for tenders. In the second form, the call for tenders is financed by EU funds or private contributions to the mechanism or combinations thereof. In this case the renewable energy generated by the project will count towards the EU-wide renewable energy target and not the renewable energy share of the host country.

Additionality of projects supported through the financing mechanism

The projects supported through the second form of financing mentioned above, contribute to renewable energy deployment in addition to what is done by Member States in order to achieve their national targets. The question whether these investments are additional, i.e. the projects would not have been financed in the absence of the financing mechanism, depends on several factors. The most important factors are: the overall profitability of renewable energy technologies without subsidies, the performance of Member States compared to their indicated renewable energy deployment pathways (depending on the interpretation of the objectives of the Financing Mechanism) and the type of renewable energy technology that is supported.

Profitability of renewables

Even though the costs of renewables have come down tremendously in the last decade, most projects still require public financial support to achieve a viable business case, although some projects have already been realised without the need for energy public subsidies (e.g. solar projects in Spain, and some offshore wind projects that are still to be built in Germany and Denmark). The level of additionality of publicly supported projects is strongly related to the pace by which the cost of renewables becomes fully competitive with conventional energy sources. When most renewable technologies become cost competitive, additional public funding is unlikely to lead to additional renewable energy deployment and poses a high risk of creating windfall profits for project developers and investors. On the other hand, while most renewables remain uncompetitive in the next few years, additional support from public sources is likely to generate additional renewable energy deployment. The case where one can say with relatively high certainty that investments from the EU Financing Mechanism are additional, is when Member States have collectively reached their targets but there is still a gap to the EU-wide target. In this case, Member States are unlikely to provide additional public support to renewables, unless this is the most cost-effective way to reach their GHG targets.

The performance of Member States compared to their indicated pathways

When the EU Financing Mechanism invests in renewable energy projects in Member States that fall short compared to their projected renewable energy deployment pathway well before 2030, some of these projects might have been supported by the Member State itself at a later point in time. As such, when the EU Financing Mechanism

kicks in too early, it might substitute Member State contributions instead of complementing it. However, this problem does not exist when the EU/private contributions will be used for RE deployment beyond the union-wide renewables target as suggested in the draft implementing act for the Mechanism. In this case, projects supported by this part of the mechanism are additional by definition (provided that the supported projects require public support to be economically viable). On the other hand, this broad interpretation of the objectives of the EU/privately funded share of the Mechanism seem to be at odds with the gap-filling objective defined in the Energy Union Governance regulation.

The type of renewable energy technology that is supported

The EU Financing Mechanism provides the possibility to develop technology-specific calls for tender. When such technology-specific calls support more expensive innovative technologies, these investments are more likely to be additional as most Member State instruments focus on financing the cheapest technologies in order to reach high volumes of renewable energy deployment in the most cost-effective way. As such, focusing investments from the EU Financing Mechanism on more innovative technologies increases the likelihood that the investments will be additional. The same holds for the support of renewable energy deployment in the heating & cooling and transport sectors.

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696, or
- by email via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from: <https://op.europa.eu/en/publications>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

EU law and related documents

For access to legal information from the EU, including all EU law since 1952 in all the official language versions, go to EUR-Lex at: <http://eur-lex.europa.eu>

Open data from the EU

The EU Open Data Portal (<http://data.europa.eu/euodp/en>) provides access to datasets from the EU. Data can be downloaded and reused for free, for both commercial and non-commercial purposes.

