Ecos

Electricity Consumption Optimization Score

Problem Statement

- Disattentive energy consumption in **households**
- Electrical grid capacity is limited
- Finland risk of power outages is more actual than ever [2]

31%
Household consumption share of total in Finland [4]

+6%
Household share increase since 2007 [1] [4]

4 billion
Yearly cost of energy for householding [3][4][5]

[1]: https://www.sciencedirect.com/science/article/abs/pii/S1040619020301159
[2]: https://www.fingrid.fi/en/grid/information-regarding-electricity-shortages/
[3]: https://energia.fi/uutishuone/materiaalipankki/sahkonkaytto_kunnittain_2007-2021.html#material-view
[4]: https://ec.europa.eu/eurostat/databrowser/view/nrg_cb_pem/default/table?lang=EN
[5]: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_price_statistics

ECOScore

ECOScore aims to reduce electricity misusage within households.

- Scalable AI approach based on Cloud
- Focused on Fairness, Meritocracy and Explainability

ECOScore quantifies how good an household consumer is compared with the rest of the group.

How it works

ECOS

Anagraphic Data

Building info, Consumers details, Contract information

Customers Clustering

How it works

Energy Consumption Data

Hourly Kw/h consumption

Weather Forecast Data

Hourly Temperature, Sun,

Wind Speed, Humidity Level

ECOS

Time Series

Data Processing

Anagraphic Data

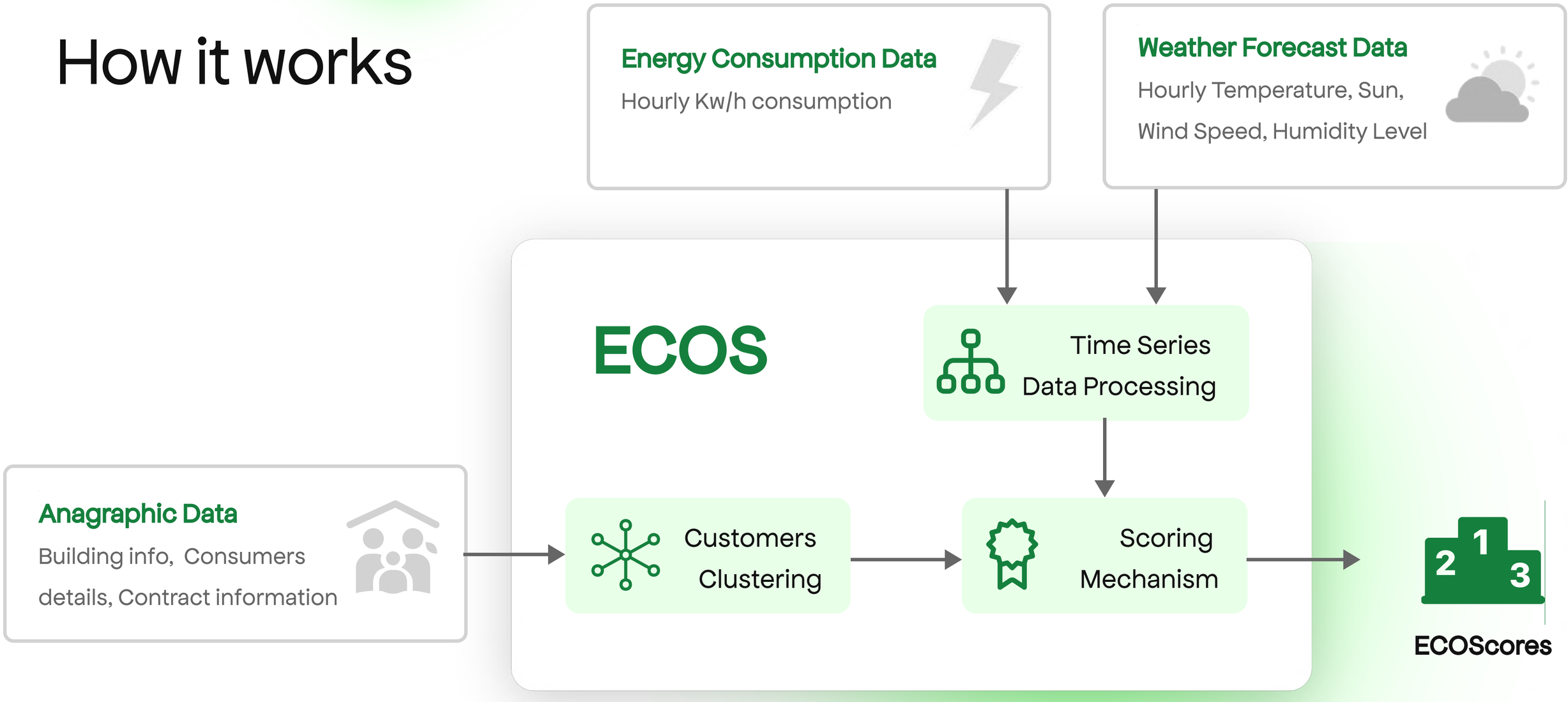
Building info, Consumers

details, Contract information

Customers

Clustering

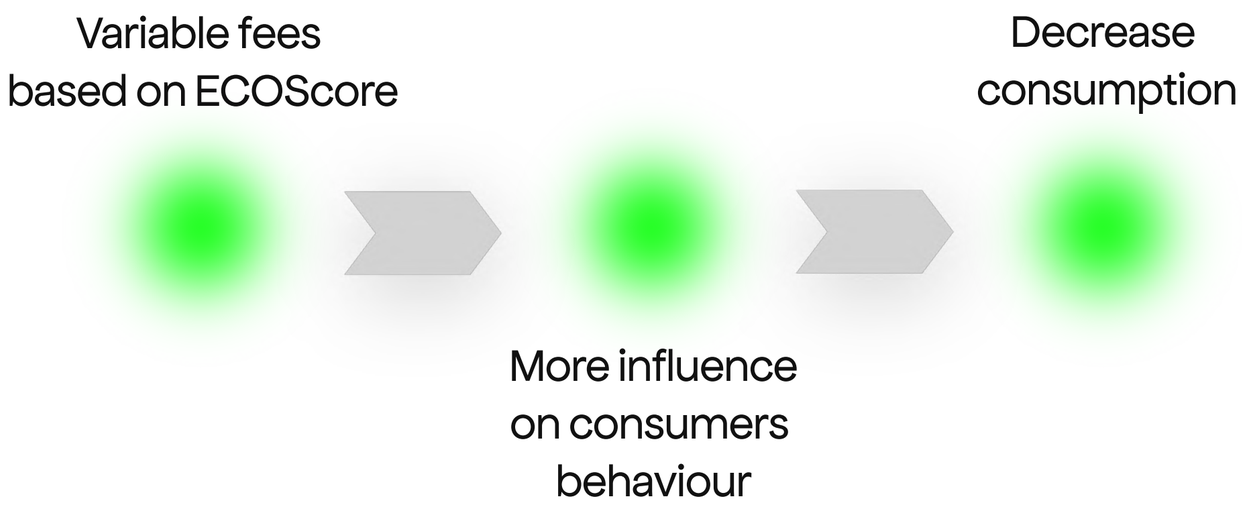
How it works



Case Studies

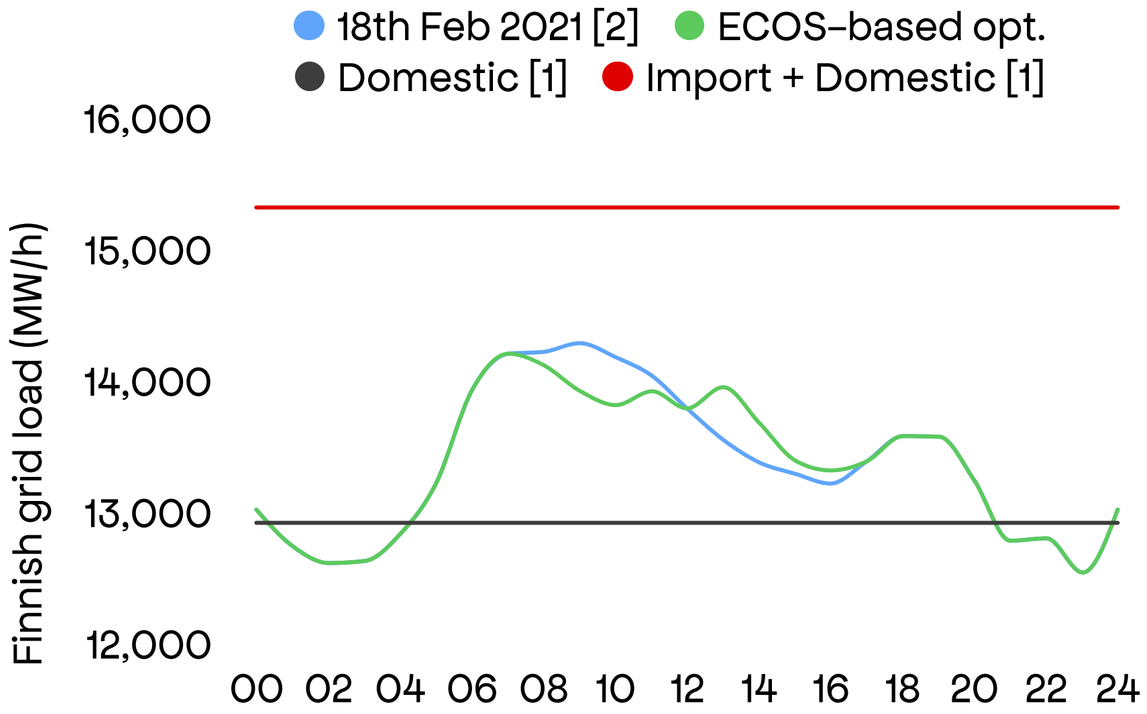
Electricity Providers and Public Entities.

ECOScore brings meritocracy into the electricity bill, reducing fees for virtuous households.



Winter is coming

This winter Finland might experience **power outages** due to energy supply–demand issues. [1]
Reducing electricity consumption **at peak** is key to increase grid's resilience.



Shifting 5% of household peak usage brings 11% less of foreign energy dependence. [based on 1]

[1]: https://www.fingrid.fi/en/news/news/2022/several-uncertainties-in-the-adequacy-of-electricity-in-the-coming-winter--finns-should-be-prepared-for-possible-power-outages-caused-by-electricity-shortages/

[2]: https://data.fingrid.fi/en/dataset/electricity-consumption-in-finland

Business Model

ECOS is a SaaS B2B Business.

Data Driven Monetization

- Free
- Incentivize businesses to use it
- Consumers data are used to improve the ECOS algorithm

Subscription Monetization

- Monthly license fee (based on # of consumers)
- Business owns consumers data

Our Team 🇮🇹

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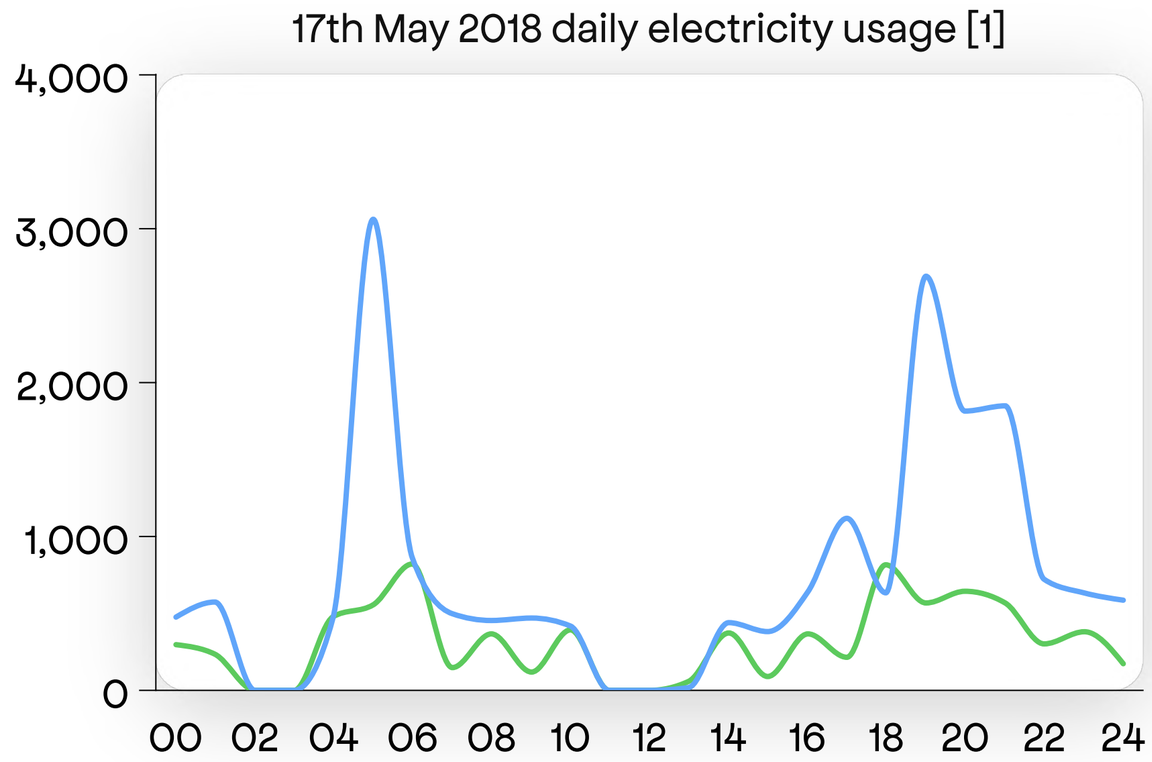
Thank you —— all

Ecos

Extra

How much will **a virtuous consumer** save?



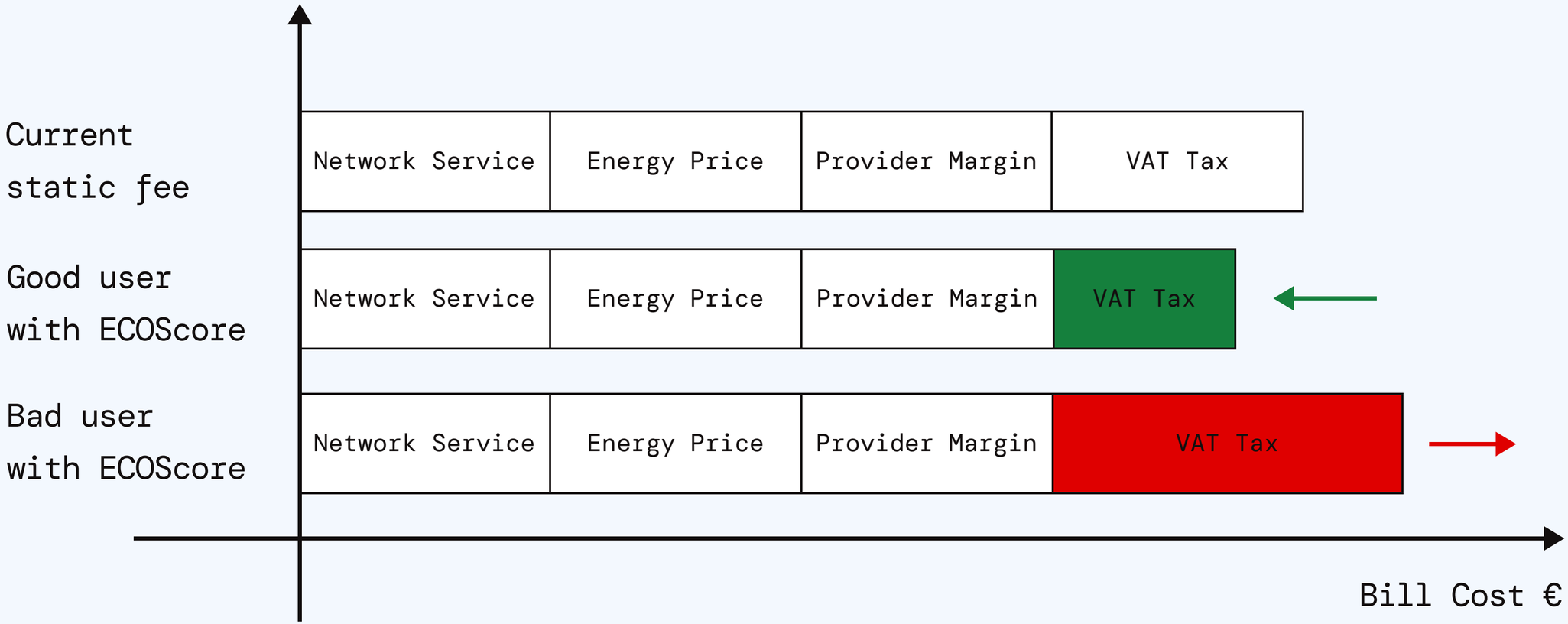
Daily bill cost (€)

	w/o ECOS	w/ ECOS	w/o ECOS	w/ ECOS
Morning	0.468	0.461	1.121	1.169
Afternoon	0.215	0.206	0.506	0.511
Evening	0.505	0.505	1.359	1.437
Night	0.363	0.358	0.673	0.681
Additional expense		**–1.3%**		**+3.6%**

[1]: https://datashare.ed.ac.uk/handle/10283/3647

Electricity's Fee Structure (Simplified)

What are the change in the electricity fee structure after the ECOScore implementation?



ECOScore and existing contracts

Existing consumers have different plans, how could the energy provider affects their consumption?

Fixed-price plan

ECOScore can be used to adjust only the VAT Tax.

Spot-price plan

ECOScore can be used to adjust both Electricity provider margins and VAT Tax.

Execution Plan & Costs

How much does it cost to implement the framework? And how much time?

Fixed

Cloud Infrastracture
–> 200€/month

Weather service
–> 150€/month

Dynamic

Costs are based on number of requests.
The more requests the lower the price per unit overall
–> ~0,0025€/request)

The solution would be ready to be delivered in approximately 12 months.