

# Circular Economy Ontology Network (CEON) - Energy Module

## Metadata

### IRI

<http://w3id.org/CEON/ontology/energy/>

### Title

Circular Economy Ontology Network (CEON) - Energy Module

### Publisher

Onto-DESIDE

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### Version Iri

<http://w3id.org/CEON/ontology/energy/0.2/>

### Version Info

0.2

### Prior Version

0.1

### Preferred Namespace Prefix

ceon-energy

### Preferred Namespace Uri

<http://w3id.org/CEON/ontology/energy/>

### Description

A module of the CEON ontology network defining aspects of the energy concept.

### Covers Requirements

Covers the following requirements from Onto-DESIDE D3.2: CE1-2, CE4-3, CE6-3, CE7-4, CE7-4, CE8-2, CE9-2, CE10-7, CE10-9, CE11-6, CE12-5.

## Classes

### Biofuel<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/Biofuel>

**Sub Class Of** [Biomass<sup>c</sup>](#)

### Biogas<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/Biogas>

**Sub Class Of** [Biomass<sup>c</sup>](#)

## Biomass<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/energy/Biomass">http://w3id.org/CEON/ontology/energy/Biomass</a>
<b>Sub Class Of</b>	<a href="#">EnergySource<sup>c</sup></a>
<b>Super Class Of</b>	<a href="#">Biofuel<sup>c</sup></a> <a href="#">Biogas<sup>c</sup></a>

## Coal<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/energy/Coal">http://w3id.org/CEON/ontology/energy/Coal</a>
<b>Sub Class Of</b>	<a href="#">FossilFuel<sup>c</sup></a>

## Energy<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/energy/Energy">http://w3id.org/CEON/ontology/energy/Energy</a>
<b>Sub Class Of</b>	<a href="http://w3id.org/CEON/ontology/resourceODP/Resource">http://w3id.org/CEON/ontology/resourceODP/Resource</a>
<b>In Domain Of</b>	<a href="#">hasEnergySource<sup>op</sup></a>
<b>Super Class Of</b>	<a href="#">NonRenewableEnergy<sup>c</sup></a> <a href="#">RenewableEnergy<sup>c</sup></a>

## Energy Composition<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/energy/EnergyComposition">http://w3id.org/CEON/ontology/energy/EnergyComposition</a>
<b>Sub Class Of</b>	<a href="http://w3id.org/CEON/ontology/actorODP/ResourceParticipation">http://w3id.org/CEON/ontology/actorODP/ResourceParticipation</a>
<b>In Domain Of</b>	<a href="#">hasEnergyComponentPercentage<sup>dp</sup></a>

## Energy Conversion<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/energy/EnergyConversion">http://w3id.org/CEON/ontology/energy/EnergyConversion</a>
<b>Sub Class Of</b>	<a href="http://w3id.org/CEON/ontology/actorODP/ResourceRelation">http://w3id.org/CEON/ontology/actorODP/ResourceRelation</a>

## Energy Infrastructure<sup>c</sup>

<b>IRI</b>	<a href="http://w3id.org/CEON/ontology/energy/EnergyInfrastructure">http://w3id.org/CEON/ontology/energy/EnergyInfrastructure</a>
<b>Sub Class Of</b>	<a href="http://w3id.org/CEON/ontology/actorODP/Infrastructure">http://w3id.org/CEON/ontology/actorODP/Infrastructure</a>

## Energy Source<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/EnergySource>

**In Domain Of**  
[hasCarbonIntensity<sup>dp</sup>](#)  
[hasSustainability<sup>dp</sup>](#)

**In Range Of** [hasEnergySource<sup>op</sup>](#)

**Super Class Of**  
[Biomass<sup>c</sup>](#)  
[FossilFuel<sup>c</sup>](#)  
[GeothermalEnergySource<sup>c</sup>](#)  
[Hydropower<sup>c</sup>](#)  
[SolarEnergySource<sup>c</sup>](#)  
[WindEnergySource<sup>c</sup>](#)

## Fossil Fuel<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/FossilFuel>

**Sub Class Of** [EnergySource<sup>c</sup>](#)

**Super Class Of**  
[Coal<sup>c</sup>](#)  
[NaturalGas<sup>c</sup>](#)  
[Petroleum<sup>c</sup>](#)

## Geothermal Energy Source<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/GeothermalEnergySource>

**Sub Class Of** [EnergySource<sup>c</sup>](#)

## Hydropower<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/Hydropower>

**Sub Class Of** [EnergySource<sup>c</sup>](#)

## Natural Gas<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/NaturalGas>

**Sub Class Of** [FossilFuel<sup>c</sup>](#)

## Non Renewable Energy<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/NonRenewableEnergy>

**Sub Class Of** [Energy<sup>c</sup>](#)

## Petroleum<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/Petroleum>

**Sub Class Of** [FossilFuel<sup>c</sup>](#)

## Renewable Energy<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/RenewableEnergy>

**Sub Class Of** [Energy<sup>c</sup>](#)

## Solar Energy Source<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/SolarEnergySource>

**Sub Class Of** [EnergySource<sup>c</sup>](#)

## Wind Energy Source<sup>c</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/WindEnergySource>

**Sub Class Of** [EnergySource<sup>c</sup>](#)

## Object Properties

### has anergy<sup>op</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasAnergy>

**Sub Property Of** [http://w3id.org/CEON/ontology/actorODP/participatingObject](#)

### has converted energy<sup>op</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasConvertedEnergy>

**Sub Property Of** [http://w3id.org/CEON/ontology/actorODP/participatingResource](#)

**Range** [NonRenewableEnergy<sup>c</sup> or RenewableEnergy<sup>c</sup>](#)

### has energy source<sup>op</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasEnergySource>

**Domain** [Energy<sup>c</sup>](#)

**Range** [EnergySource<sup>c</sup>](#)

has exergy<sup>op</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasExergy>

**Sub Property Of** <http://w3id.org/CEON/ontology/actorODP/participatingObject>

has original energy<sup>op</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasOriginalEnergy>

**Sub Property Of** <http://w3id.org/CEON/ontology/actorODP/participatingResource>

**Range** [NonRenewableEnergy<sup>c</sup>](#) or [RenewableEnergy<sup>c</sup>](#)

participating energy<sup>op</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/participatingEnergy>

**Sub Property Of** <http://w3id.org/CEON/ontology/actorODP/participatingSubject>

## Datatype Properties

has carbon intensity<sup>dp</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasCarbonIntensity>

**Domain** [EnergySource<sup>c</sup>](#)

**Range** [xsd:double](#)

has energy component percentage<sup>dp</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasEnergyComponentPercentage>

**Domain** [EnergyComposition<sup>c</sup>](#)

**Range** [xsd:double](#)

has sustainability<sup>dp</sup>

**IRI** <http://w3id.org/CEON/ontology/energy/hasSustainability>

**Domain** [EnergySource<sup>c</sup>](#)

**Range** [xsd:double](#)

## Namespaces

:

<http://w3id.org/CEON/ontology/energy/>

dcterms

<http://purl.org/dc/terms/>  
**geo** <http://www.opengis.net/ont/geosparql#>  
**odp** <http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#>  
**owl** <http://www.w3.org/2002/07/owl#>  
**prov** <http://www.w3.org/ns/prov#>  
**rdf** <http://www.w3.org/1999/02/22-rdf-syntax-ns#>  
**rdfs** <http://www.w3.org/2000/01/rdf-schema#>  
**vann** <http://purl.org/vocab/vann/>  
**xsd** <http://www.w3.org/2001/XMLSchema#>

## Legend

c	Classes
op	Object Properties
dp	Datatype Properties