

Appendix 4: Make Significant Contribution and Do No Significant Harm criteria for the:

Electricity, gas, steam, air conditioning supply sector

Draft v.1 Note: writing in Green refers to draft Kenyan legislation which is to be confirmed; and writing in red requires further research.

4.1. Production of electricity, heating and cooling from Solar PV, Concentrated Solar Power, Wind Power and Ocean Energy

KeSIC code: 3510

Description of economic activity

Electricity generation using solar photovoltaic technology, Electricity generation using concentrated solar power (CSP) technology, Electricity generation from wind power, Electricity generation from ocean energy technologies, Cogeneration of heat/cool and power from solar energy, Production of heat/cool from solar thermal heating.

Make Significant Contribution Criteria

A) Climate Change Mitigation

The activity generates electricity using solar PV technology.

The activity generates electricity using CSP technology.

The activity generates electricity from wind power.

The activity generates electricity from ocean energy.

The activity consists in the cogeneration of electricity and heat/cool from solar energy.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The main potential significant harm to other environmental objectives from the installation and operation of photovoltaic (PV) panels relate to:

- The PV installation siting: impacts on ecosystems and biodiversity if built in a designated conservation area or other areas with important ecosystem and biodiversity value.
- The impacts from the production and end-of-life management of the PV systems and its component/materials: potentially significant environmental impacts are associated with the sourcing/production of materials and components of PV systems (see 'Manufacture of low carbon and resource efficiency technologies' for DNSH criteria)

The main potential significant harm to other environmental objectives from CSP is associated with:

- the construction of the installation and the substantial land-take associated with the installation
- impacts to birdlife from the high temperatures generated by the plant
- impacts of the cooling system on water resources

In spite of the crucial contribution of wind energy to mitigating climate change, there may be conflicts arising between its deployment and nature conservation at a local level. The main environmental exposures to be considered as a Do No Significant Harm (DNSH) criteria, in the most stringent sense, include:

- Underwater noise created in the installation of bottom-fixed offshore wind turbines;
- The composite waste generated from both on- and offshore wind turbine blades at the end of their lifetime;
- The possible disturbance, displacement or collision of birds and bats by the construction and operation of wind farms
- The possible deterioration of water ecosystem associated to the construction of offshore wind farms
- The possible visual impacts created by landscape change in the installation of wind turbines
- The main potential significant harm to other environmental objectives from ocean energy is associated with:
- Construction, deployment, operation and maintenance of ocean energy installations can impact on marine ecosystems and biodiversity
- Pollution from lubricants and anti-fouling paints and emissions from maintenance and inspection vessels.

A) Climate Change Mitigation

N/A.

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

For Solar PV

N/A

For CSP

N/A

For Wind power

N/A

For Ocean Energy

- Measures in place to minimise toxicity of anti-fouling paint and biocides which implements the International Convention on the Control of Harmful Anti-fouling Systems on Ships
- Use of chemicals must adhere to the [Environment Management and Coordination \(Toxic and Hazardous Industrial Chemicals and Materials Management\) Regulations 2018](#), and [ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION \(WASTE MANAGEMENT\) REGULATIONS 2006](#), and [Occupational Safety and Health Act, 2007](#)

F) Sustainable resource use and circularity

For PV, CSP, Wind Power and Ocean Energy

- The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.

4.2. Production of electricity, heating and cooling from Hydropower

KeSIC code: 3510

Description of economic activity

Construction and operation of electricity generation facilities that produce electricity, heating and cooling from Hydropower.

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Support a transition to a low carbon net-zero emissions economy
- Avoidance of lock-in to technologies which do not support the transition to a low carbon economy net-zero emissions economy
- Ensure that economic activities meet best practice standards
- Ensure equal comparability within an economic activity with regards to achieving low carbon net-zero emissions economy target
- Where necessary, incorporating technology-specific considerations into secondary metrics and thresholds

Metrics and thresholds

- a) The activity complies with either of the following criteria:
the electricity generation facility is a run-of-river plant and does not have an artificial reservoir
- b) the life-cycle GHG emissions from the generation of electricity from hydropower, including mixed pumped hydropower storage connected to a free-flowing water source are lower than 100gCO₂e/kWh.

The life-cycle GHG emissions are calculated using ISO 14067:2018 or ISO 14064-1:2018. Quantified life-cycle GHG emissions are verified by an independent third party.

- c) the power density of the electricity generation facility is above 5 W/m².

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The main environmental impacts associated with hydropower installations are:

- Emissions to water and generation of waste during construction;
- Impacts on biodiversity associated with fragmentation of ecosystems and changes to habitat, to hydrological and hydrogeological regimes, water chemistry, and

interference with species migration pathways as a result of the establishment of the installation and its operation.

A) Climate Change Mitigation

The direct GHG emissions of the activity are lower than 270gCO₂e/kWh.

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

For new projects:

Fulfil the requirements of Kenyan water legislation such as the ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION (WATER QUALITY) REGULATIONS, 2006, Environmental Management and Coordination (Conservation and Management of Wetlands)2009, [DRAFT Amendment Regulations, 2017 intended to amend the Environmental Management and Coordination (Wetlands, River banks, Lake shores and Sea shore Management) Regulations] where applicable and ensure that an appropriate cumulative impact assessment or equivalent study has been undertaken that identifies and addresses any significant regional or basin-level environmental and social impacts, in compliance with the ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION (WATER QUALITY) REGULATIONS, 2006 preferably at the strategic planning stage. Such a study must consider all of the planned infrastructure developments in the basin, for example as part of a hydropower cascade at the scale of the river catchment, involving all relevant stakeholders.

Ensure that the conditions ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION (WATER QUALITY) REGULATIONS, 2006 are met based on ground evidence. Those include:

- All practical steps are taken to mitigate the impacts;
- The project has been recognized of overriding public interest and/or it is proven that the benefits of the project outweigh its impacts;
- There are no significantly environmentally better option.
- The project does not show significant adverse impact on upstream or downstream water bodies.
- This applies to newly built hydropower and extension of existing hydropower.

Construction of new hydropower should not lead to increase fragmentation of rivers, consequently refurbishment of existing hydropower plant and rehabilitation of existing barriers should be prioritised. Construction of small hydropower (<10MW) should be avoided.

During operation:

- All necessary mitigation measures should be implemented to reach good ecological status or potential, in particular regarding ecological continuity and ecological flow. Priority should be given to nature-based solutions.
- IFC's and World Bank Group's environmental and social standards.

- General impacts: Operation of the hydro power plant must adhere to the principles of the UNECE Convention on the Protection and Use of Transboundary, Watercourses and International Lakes.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

N/A

F) Sustainable resource use and circularity

N/A

4.3. Production of electricity, heating and cooling from Geothermal

KeSIC code: 3510

Description of economic activity

Construction and operation of electricity generation facilities that produce electricity, heating and cooling from Geothermal

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Support a transition to a low carbon net-zero emissions economy
- Avoidance of lock-in to technologies which do not support the transition to a low carbon economy net-zero emissions economy
- Ensure that economic activities meet best practice standards
- Ensure equal comparability within an economic activity with regards to achieving low carbon net-zero emissions economy target
- Where necessary, incorporating technology-specific considerations into secondary metrics and thresholds

Metrics and thresholds

Any electricity, heating and cooling generation technology or cogeneration technology can be included in the taxonomy if it can be demonstrated, using an ISO 14067 or a GHG Protocol Product Lifecycle Standard-compliant Product Carbon Footprint (PCF) assessment, that the life cycle impacts for producing 1 kWh of electricity are below the declining threshold.

A full PCF or GHG lifecycle assessment shall be applied, using project specific-data where relevant, and shall be subjected to review.

Declining threshold: Facilities operating at life cycle emissions at or lower than 100g CO₂e/kWh, declining to net-0gCO₂e/kWh by 2050, are eligible.

- This threshold will be reduced every periodically 5 years in line with a **Kenya's net-zero CO₂e in 2050 trajectory climate mitigation target**
- Assets and activities must meet the threshold at the point in time when taxonomy approval is sought

For activities which operate beyond 2050, it must be technically feasible to reach net-zero emissions in scope 1 emissions.

For a given investment or activity to be compatible with this trajectory, its average emissions over its physical lifetime, or 40 years (whichever is shorter), must be lower than the threshold.

Quantified life cycle GHG emissions are verified by an independent third party.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The main potential significant harm to other environmental objectives from Production of electric energy from high-enthalpy geothermal system is associated with:

- Non-condensable geothermal gases with specific environmental threats, such as H₂S, CO₂, and CH₄, are often released from flash-steam and dry-steam power plants. Binary plants ideally represent closed systems and no steam is emitted.
- Possible emissions to surface and underground water

A) Climate Change Mitigation

If the activity operates at above the threshold for substantial contribution to climate change mitigation, there should be:

- no increase in emissions intensity of the activity as a result of the adaptation; and
- no activity can have emissions intensity above the average emissions intensity of all electricity generation facilities in the respective region.

DNSH to mitigation is considered as avoidance of activities which would compromise Kenya's Nationally Determined Contribution (NDC) emissions reductions target of reducing emissions by 32% below BAU by 2030. Activities which operate below the 100g threshold provide a significant contribution, and that activities that operate above the regional average of 475g would cause significant harm. Therefore, while activities below this 475g threshold are not considered to be providing a substantial contribution, they are also not considered to be doing significant harm.

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

- Use of chemicals must adhere to the [Environment Management and Coordination \(Toxic and Hazardous Industrial Chemicals and Materials Management\) Regulations 2018](#), and [ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION \(WASTE MANAGEMENT\) REGULATIONS 2006](#), and [Occupational Safety and Health Act, 2007](#)
- Discharges to water bodies should comply with individual license conditions for specific operations as governed by the [ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION \(WATER QUALITY\) REGULATIONS, 2006](#), where applicable. Emissions to air: the operations of high-enthalpy geothermal energy systems should ensure that adequate abatement systems are in place to

comply with the **THE ENVIRONMENT MANAGEMENT AND CO-ORDINATION (AIR QUALITY) REGULATIONS (2014)[2022 in draft]**, including but not limited to $<1 \mu\text{g}/\text{Nm}^3$ Hg.

- Thermal anomalies associated with the discharge of waste heat should not exceed 3°K for groundwater environments or 1.5°K for surface water environments, respectively.

F) Sustainable resource use and circularity

N/A

4.4. Production of electricity, heating and cooling from Bioenergy

KeSIC code: 3510

Description of economic activity

Construction and operation of electricity generation facilities that produce electricity, heating and cooling from Bioenergy (Biomass, Biogas and Biofuels)

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Support a transition to a low carbon net-zero emissions economy
- Avoidance of lock-in to technologies which do not support the transition to a net-zero emissions economy
- Ensure that economic activities meet best practice standards
- Ensure equal comparability within an economic activity with regards to achieving low carbon net-zero emissions economy target
- Where necessary, incorporating technology-specific considerations into secondary metrics and thresholds

Metrics and thresholds

Production of electricity, heating and cooling from biofuels shall be assessed in relation to the relative fossil fuel comparator. Facilities operating above 80% of GHG emissions-reduction in relation to the relative fossil fuel comparator increasing to 100% by 2050, are eligible.

This threshold will be reduced every periodically 5 years in line with Kenya's 2050 net-zero trajectory. Assets and activities must meet the threshold at the point in time when taxonomy approval is sought

For activities which go beyond 2050, it must be technically feasible to reach net-zero emissions For Anaerobic Digestion of Biowaste and Sewage Sludge, refer to relevant activities in the KGFT.

Any other anaerobic digestion of organic material (not covered under relevant activity in KGFT) is eligible provided that:

- methane leakage from relevant facilities (e.g. for biogas production and storage, energy generation, digestate storage) is controlled by a monitoring plan. - the digestate produced is used as fertiliser/s oil improver
- directly or after composting or any other treatment

Additionally, the biomass used must meet one of the following criteria:

- › Bioenergy produced from waste (e. g. agricultural, municipal) is eligible, and full traceability of the feedstock supply must be ensured,
- › The feedstock used for bioenergy production complies with the criteria for the relevant activities in the agriculture sector or
- › The feedstock used for bioenergy production must comply with sustainability

certifications such as:

- » Forest Stewardship Council (FSC)
- » Voluntary Biomass Biofuels Scheme (2BSvs)
- » Bonsucro – International Sustainability and Carbon Certification (ISCC Plus)
- » Roundtable on Sustainable Biomaterials (RSB)
- » Roundtable on Responsible Soy (RTRS)

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The key environmental aspects to be taken into account when investing in this activity are the impact on local water (consumption and sewage), the fulfilment of the applicable waste and recycling criteria, the SO₂, NO_x dust and other emissions control and the avoidance of direct impacts on sensitive ecosystems, species or habitats.

Intelligent pathways for cascading use are environmentally superior and preferable to single use.

A) Climate Change Mitigation

If the activity operates at above the threshold for substantial contribution to climate change mitigation, there should be:

- no increase in emissions intensity of the activity as a result of the adaptation; and
- no activity can have emissions intensity above the average emissions intensity of all electricity generation facilities in the respective region.

DNSH to mitigation is considered as avoidance of activities which would compromise Kenya's Nationally Determined Contribution (NDC) emissions reductions target of reducing emissions by 32% below BAU by 2030 Activities which operate below the 100g threshold provide a significant contribution, and that activities that operate above the regional average of 475g would cause significant harm . Therefore, while activities below this 475g threshold are not considered to be providing a substantial contribution, they are also not considered to be doing significant harm.

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

Ensure emissions to air and water are based on the application of the Best Practicable Environmental Option (BPEO) principle informed by the Best Available Technology/Technique (BAT) approach in alignment with [THE ENVIRONMENT MANAGEMENT AND CO-ORDINATION \(AIR QUALITY\) REGULATIONS \(2014\)\[2022 in draft\]](#), and [ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION \(WASTE MANAGEMENT\) REGULATIONS 2006](#), concerning the activity in question or other techniques that provide for an equivalent level of environmental protection.

Emissions in mg/Nm³ (for biomass in large combustion plants: SO₂, NO_x, dust, CO, Mercury, HCl, HF; for biomass and for liquid biofuels in medium combustion plants: SO₂, NO_x, dust, for biogas in medium combustion plants: SO₂, NO_x)

- In case of Anaerobic digestion (AD) plants treating over 100 t/day. Ensure emissions to air and water are based on the application of the Best Practicable Environmental Option (BPEO) principle informed by the Best Available Technology/Technique (BAT) approach in alignment with [THE ENVIRONMENT MANAGEMENT AND CO-ORDINATION \(AIR QUALITY\) REGULATIONS \(2014\)\[2022 in draft\]](#), and [ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION \(WASTE MANAGEMENT\) REGULATIONS 2006](#), concerning the activity in question or other techniques that provide for an equivalent level of environmental protection.
- In case of AD, emissions to air (e.g. SO_x, NO_x) after combustion of biogas are controlled, abated (when needed) and within the limits set by national legislation illustrated above.
- In case of AD, the resulting digestate meets the requirements for fertilising materials in the FERTILIZERS AND ANIMAL FOODSTUFFS ACT (2012)

F) Sustainable resource use and circularity

N/A

4.5. Transmission and distribution of electricity

KeSIC code: 3510

Description of economic activity

Construction and operation of transmission Systems that transport the electricity on the extra high-voltage and high-voltage interconnected System.

Construction and operation of distribution Systems that transport electricity on high-voltage, medium-voltage and low-voltage distribution Systems.

Construction and operation of interconnections that transport electricity between separate systems.

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Support the integration of renewable energy into the power grid
- Support the transition from carbon-intensive energy supply, via electrification and parallel development of low carbon power generation capacity
- Support of grid management technology used for integrating low carbon emission generation and demand side energy savings
- Decreases direct emissions from transmission and distribution (T&D) infrastructure

Metrics and thresholds

All electricity transmission and distribution infrastructure or equipment in systems which are on a trajectory to full decarbonisation* are eligible, except for infrastructure that is dedicated to creating a direct connection or expanding an existing direct connection between a power production plant that is more CO₂ intensive than 100 gCO₂e/kWh, measured on a LCE basis, and a substation or network.

A System is deemed to be on a trajectory to full decarbonisation if either:

- more than 67% of newly connected generation capacity in the System is below the generation threshold value of 100 gCO₂e/kWh measured on a PCF basis, over a rolling five-year period; or
 - The average System grid emissions factor is below the threshold value of 100 gCO₂e/kWh measured on a PCF basis, over a rolling five-year average period
- These criteria will be subject to regular review, in line with reviews of generation threshold values and progress to decarbonisation. The following T&D grid related activities are eligible, irrespective of whether the system is on a pathway to full decarbonisation:
- Direct connection, or expansion of existing direct connection, of low carbon electricity generation below the threshold of 100 gCO₂e/kWh declining to 0g CO₂e/kWh in 2050, measured on a PCF basis, to a substation or network.
 - EV charging stations and supporting electric infrastructure for the electrification of transport, subject to taxonomy eligibility under the transport section.

- Equipment and infrastructure where the main objective is an increase of the generation or use of renewable electricity generation
- Equipment to increase the controllability and observability of the electricity system and enable the development and integration of renewable energy sources, this includes:
 - Sensors and measurement tools (including meteorological sensors for forecasting renewable production)
 - Communication and control (including advanced software and control rooms, automation of substations or feeders, and voltage control capabilities to adapt to more decentralised renewable infeed)
 - Equipment to carry information to users for remotely acting on consumption
 - Equipment to allow for exchange of renewable electricity between users
- Interconnectors between transmission systems are eligible, provided that one of the systems is eligible. Definitions and Notes:
 - A system is defined as the transmission or distribution network control area of the network or system operator(s) where the activity takes place.
 - The annual average System grid emissions factor is calculated as the total annual emissions from power generation, divided by the total annual net electricity production in that System.
 - The rolling five-year (average) period used in determining compliance with the thresholds shall be based on historic data and shall include the year for which the most recent data is available.
 - Transmission Systems may include generation capacity connected to subordinated Distribution Systems.
 - Distribution Systems subordinated to a Transmission System that is deemed to be on a trajectory to full decarbonisation may also be deemed to be on a trajectory to full decarbonisation.
 - To determine eligibility, it is possible to consider a System covering multiple control areas which are interconnected and with significant energy exchanges between them. In such a case, the weighted average emissions factor across all included control areas is used to determine eligibility, and individual subordinated transmission or distribution systems within this System will not be required to demonstrate compliance separately.
 - It is possible for a System to become ineligible after having previously been eligible. In Systems that become ineligible, no new T&D activities are eligible from that moment onward, until the system is again in compliance with the threshold (except for those activities which are always eligible, see above). Activities in subordinated Systems may still be eligible if these subordinated Systems meet the criteria of this Taxonomy.
 - A direct connection or expansion of an existing direct connection to production plants includes infrastructure that is indispensable to carry the associated electricity from the power generating facility to a substation or network.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The impacts of transmission and distribution lines are a function of the spatial alignment of the grid, the structures and conductors required for various voltages, the extent to which pre-existing corridors are used, and how the transmission and distribution lines are operated and maintained. The most common environmental impacts of electricity transmission and distribution infrastructure are visual, ecosystem and land use. In the cases of underground offshore electricity lines, water and marine resources may be impacted.

A) Climate Change Mitigation

Direct connections to generation units shall be below the average emission intensity of all electricity generation facilities in the region.

B) Climate Change Adaptation

Further adaptation guidance:

The table below illustrates the typical sensitivities of this activity to climate-related hazards. Relevant climate-related hazard will be location and context specific and should be identified through a climate risk assessment as indicated in screening criteria A1 of the table. Depending on the primary objective of the activity, refer to Section 8.2 Screening criteria for activities making a substantial contribution to climate change adaptation.

Temperature-related	Wind-related	Water-related	Solid mass - related
Chronic			
<ul style="list-style-type: none">• Changing temperature• Heat stress• Temperature variability	<ul style="list-style-type: none">• Changing wind patterns	<ul style="list-style-type: none">• Changing precipitation patterns and types• Sea level rise	<ul style="list-style-type: none">• Coastal erosion• Soil erosion• Solifluction
Acute			
<ul style="list-style-type: none">• Heat wave• Cold wave/frost• Wildfire/veldfire	<ul style="list-style-type: none">• Cyclone, hurricane, typhoon• Storm• Tornado	<ul style="list-style-type: none">• Drought• Extreme precipitation• Flood	<ul style="list-style-type: none">• Avalanche• Landslide• Subsidence

C) Sustainable use of water and marine resources

Underground power lines:

- Avoid routings with heavy impact on marine and terrestrial ecosystems (proven by an EIA) and adhere to ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT, 1999 (ACT NO 8 OF 1999) as amended or IFC General EHS Guidelines for construction site activities follow, whichever is stricter.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

Underground power lines:

Avoid routings with heavy impact on marine and terrestrial ecosystems (proven by an EIA), UNESCO World Heritage Sites and Critical Biodiversity Areas (CBAs) and follow the principles of IFC General EHS Guidelines for construction site activities.

E) Pollution prevention

Overground high voltage lines:

- For construction site activities these are to adhere to ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT, 1999 (ACT NO 8 OF 1999) as amended and follow the principles of IFC General Environmental, Health, and Safety Guidelines.
- Respect applicable norms and regulations to limit impact of electromagnetic radiation on human health.

Do not use PCBs Polychlorinated Biphenyls.

F) Sustainable resource use and circularity

State ambition to maximise recycling at end of life based on BAT at time of decommissioning (e.g. through contractual agreements with recycling partners, reflection in financial projections or official project documentation).

4.6. Storage of electricity

KeSIC code: No specific KeSIC code

Description of economic activity

Construction and operation of facilities that store electricity and/or renewable energy, and return it at a later time, in the form of electricity or other energy vectors. This does not include Demand Side Management (load shedding and load shifting)

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Power grid stabilisation: making best use of excess electricity
- The effective utilisation of peak electricity generation
- Enabling the integration of low-carbon electricity
- Back-up power capabilities

Metrics and thresholds

Eligibility criteria for Demand Side Management (load shifting) activities are available under the transmission & distribution of electricity criteria. However, hydropower pumped storage shall comply with the criteria for activity “Production of electricity, heating and cooling from Hydropower.”

Where the activity includes chemical energy storage, the medium of storage (such as hydrogen or ammonia) complies with the criteria for manufacturing of the corresponding product specified in the relevant activity in the KGFT. In case of using hydrogen as electricity storage, where hydrogen meets the technical screening criteria specified in the relevant activity in the KGFT, re-electrification of hydrogen is also considered part of the activity.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The electricity storage activities differ considerably in their physical, chemical and biological bases and forms, which result in divergent environmental impacts in each case.

A) Climate Change Mitigation

N/A

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

For closed-loop pumped hydropower storage, environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed, in accordance with a water use and protection management plan, developed in consultation with relevant stakeholders.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

N/A

F) Sustainable resource use and circularity

A waste management plan is in place and ensures maximal reuse or recycling at end of life in accordance with the waste hierarchy, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.

4.7. Storage of thermal energy

KeSIC code: No specific KeSIC code

Description of economic activity

Construction and operation of facilities that store thermal energy, and return it at a later time, in the form of thermal energy or other energy vectors.

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Power grid stabilisation: making best use of excess electricity
- The effective utilisation of peak electricity generation
- Enabling the integration of low-carbon electricity
- Back-up power capabilities

Metrics and thresholds

Currently all thermal energy storage is eligible under the Taxonomy (including Thermal Energy Storage (UTES) or Aquifer Thermal Energy Storage (ATES), subject to regular review.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The electricity storage activities differ considerably in their physical, chemical and biological bases and forms, which result in divergent environmental impacts in each case.

A) Climate Change Mitigation

N/A

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

For Aquifer Thermal Energy Storage, environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed, in accordance with a water use and protection management plan, developed in consultation with relevant stakeholders.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

N/A

F) Sustainable resource use and circularity

A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.

4.8. Storage of hydrogen

KeSIC code: No specific KeSIC code

Description of economic activity

Construction and operation of facilities that store hydrogen, and return it at a later time, in the form of hydrogen or other energy vectors

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Power grid stabilisation: making best use of excess electricity
- The effective utilisation of peak electricity generation

Metrics and thresholds

The activity is one of the following: construction of hydrogen storage facilities; conversion of existing underground gas storage facilities into storage facilities dedicated to hydrogen storage; operation of hydrogen storage facilities where the hydrogen stored in the facility meets the criteria for manufacture of hydrogen set out in the relevant activity in the KGFT.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The electricity storage activities differ considerably in their physical, chemical and biological bases and forms, which result in divergent environmental impacts in each case.

A) Climate Change Mitigation

N/A

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

N/A

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

Comply with the ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION (WASTE MANAGEMENT) REGULATIONS 2006

F) Sustainable resource use and circularity

A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.

4.9. Transmission and distribution networks for renewable and low-carbon gases

KeSIC code: 3520

Description of economic activity

Repurposing of gas networks for the distribution of gaseous fuels through a system of mains.
Repurposing of gas networks for long-distance transport of renewable and low-carbon gases by pipelines.
Construction or operation of transmission and distribution pipelines dedicated to the transport of hydrogen or other low-carbon gases.

Low-carbon gases include biogas/biomethane and hydrogen produced from hydrogen that complies with the technical screening criteria set out in “Manufacture of Hydrogen” activity

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

Significant GHG emissions reductions by reducing leakage and increasing the volume of hydrogen and other low-carbon gases used in the system

Metrics and thresholds

The activity is one of the following:

- construction of hydrogen storage facilities;
- conversion of existing underground gas storage facilities into storage facilities dedicated to hydrogen storage;
- operation of hydrogen storage facilities where the hydrogen stored in the facility meets the criteria for manufacture of hydrogen set out in relevant activity in KGFT.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

The main potential significant harm to other environmental objectives from retrofit and operation of existing gas distribution and supply networks that allow for the use of hydrogen and other low-carbon gas systems are associated with:

- Retrofitting phase of the network: all aspects have to be considered that are usually connected with construction like terrestrial habitat alteration, loss of valuable ecosystems, land consumption, overburden disposal, negative impacts on biodiversity, emissions of particles and NOx, noise and hazardous materials. For larger projects an EIA should be done.

- Operation phase: Leakages should be kept at a minimum. Underground networks can have an impact on ground water systems and on local ecosystems.

C) Climate Change Mitigation

The repurposing does not increase gas transmission and distribution capacity.

The repurposing does not extend the lifespan of the networks beyond their pre-retrofit projected lifespan, unless the network is dedicated to hydrogen or other low-carbon gases.

D) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

E) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

F) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

G) Pollution prevention

Fans, compressors, pumps and other equipment used which is covered comply, where relevant, with the top class requirements of the energy label, and with implementing regulations and represent the best available technology.

H) Sustainable resource use and circularity

N/A

4.10. District heating/cooling distribution

KeSIC code: 3530

Description of economic activity

Construction and operation of pipelines and associated infrastructure for distribution of heating and cooling, ending at the sub-station or heat exchanger.

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Support a transition to a low carbon net-zero emissions economy
- Avoidance of lock-in to technologies which do not support the transition to a low carbon economy net-zero emissions economy
- Ensure that economic activities meet best practice standards
- Ensure equal comparability within an economic activity with regards to achieving low carbon net-zero emissions economy target
- Where necessary, incorporating technology-specific considerations into secondary metrics and thresholds
- Support the installation and operation of energy efficiency upgrades
- Metrics and thresholds.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

Key environmental aspects to be considered for the investments in Distribution of District Level Heating and Cooling are summarised as follow:

- For the construction of the mains, the potential significant harms to the environmental objectives are constituted by the typical potential harms connected to construction of facilities in general. This includes inter alia, terrestrial habitat alteration, loss of valuable ecosystem, land consumption, overburden disposal, negative effects on biodiversity, emissions of particles and NOx, noise and hazardous materials.
- For the operation of the district heating networks, potential significant impacts are considered low. They relate mainly to the potential impact of underground district heating networks on drinking water/ground water systems and local ecosystems through corrosion products from corrosion of the distribution system elements and applied water additives that may be non-biodegradable.

C) Climate Change Mitigation

The direct greenhouse gas emissions of the activity are lower or equal to 475 gCO₂e/KWh. DNSH to mitigation is considered as avoidance of activities which would

compromise Kenya's Nationally Determined Contribution (NDC) emissions reductions target of reducing emissions by 32% below BAU by 2030.

D) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

E) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

F) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

G) Pollution prevention

A minimum requirement is the implementation and adherence to a recognised environmental management system (ISO 14001 or equivalent).

H) Sustainable resource use and circularity

N/A

4.11. Installation and operation of electric heat pumps

KeSIC code: 3530

Description of economic activity

Installation and operation of electric heat pumps

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Support a transition to a low carbon net-zero emissions economy
- Avoidance of lock-in to technologies which do not support the transition to a low carbon economy net-zero emissions economy
- Ensure that economic activities meet best practice standards
- Ensure equal comparability within an economic activity with regards to achieving low carbon net-zero emissions economy target
- Where necessary, incorporating technology-specific considerations into secondary metrics and thresholds
- Electric heat pumps have no direct emissions and can increase the use of low carbon electricity with a high coefficient of performance.

Metrics and thresholds

Currently, installation and operation of electric heat pumps is eligible, if:

- Refrigerant threshold: GWP \leq 675; and
- A minimum requirement is the implementation and adherence to a recognised environmental management system (ISO 14001 or equivalent)

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

A) Climate Change Mitigation

N/A

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

D) Ecosystem protection and restoration

N/A

E) Pollution prevention

For air to air heat pumps with rated capacity of 12kW or below, indoor and outdoor sound power levels are required to adhere to the thresholds set in the below table.

Rate capacity ≤ 6 kW		6 < Rated capacity ≤ 12 kW	
Indoor sound power level in dB(A)	Outdoor sound power level in dB(A)	Indoor sound power level in dB(A)	Outdoor sound power level in dB(A)
60	65	65	70

F) Sustainable resource use and circularity

The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.

A waste management plan is in place and ensures maximal reuse, remanufacturing or recycling at end of life, including through contractual agreements with waste management partners, reflection in financial projections or official project documentation.

4.12. Production of heating/cooling using waste heat

KeSIC code: 3530

Description of economic activity

Production of heating and cooling using Waste Heat

Make Significant Contribution Criteria

A) Climate Change Mitigation

Objective

- Support a transition to a low carbon net-zero emissions economy
- Avoidance of lock-in to technologies which do not support the transition to a low carbon economy net-zero emissions economy
- Ensure that economic activities meet best practice standards
- Ensure equal comparability within an economic activity with regards to achieving low carbon net-zero emissions economy target
- Where necessary, incorporating technology-specific considerations into secondary metrics and thresholds

Metrics and thresholds

The activity produces heating/cooling from waste heat.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

Key environmental aspects to be considered for the production of heat/cool using waste heat are generally moderate and should mostly be covered by considerations at the heat / cool source.

A) Climate Change Mitigation

N/A

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

N/A

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.2.

E) Pollution prevention

A minimum requirement is the implementation and adherence to a recognised environmental management system (ISO 14001 or equivalent).

F) Sustainable resource use and circularity

The activity assesses availability of and, where feasible, uses equipment and components of high durability and recyclability and that are easy to dismantle and refurbish.

4.13. Electricity generation from renewable non-fossil gaseous and liquid fuels

KeSIC code: No specific KeSIC code

Description of economic activity

Construction or operation of electricity generation facilities that produce electricity using gaseous and liquid fuels of renewable origin. This activity does not include electricity generation from the exclusive use of biogas and bio-liquid fuels.

Make Significant Contribution Criteria

A) Climate Change Mitigation

Metrics and thresholds

1. Life-cycle GHG emissions from the generation of electricity using renewable gaseous and liquid fuels are lower than 100gCO₂e/kWh.

Life-cycle GHG emissions are calculated based on project-specific data, where available using ISO 14067:2018 168 or ISO 14064-1:2018 169 .

Quantified life-cycle GHG emissions are verified by an independent third party.

2. Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels), that abatement activity complies with the criteria set out in the relevant economic activity criteria in the KGFT, where applicable.

Where the CO₂ that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO₂ is transported and stored underground, in accordance with the technical screening criteria set out in "Transport of CO₂" or "Underground permanent geological storage of CO₂" of the KGFT.

3. The activity meets either of the following criteria:

(a) at construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;

(b) at operation, physical measurement of methane emissions are reported and leak is eliminated.

4. Where the activity blends renewable gaseous or liquid fuels with biogas or bioliquids, the agricultural biomass used for the production of the biogas or bioliquids complies with the criteria laid down "Production of electricity, heating and cooling from Bioenergy" of the KGFT.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

A) Climate Change Mitigation

The direct GHG emissions of the activity are lower than 270gCO₂e/kWh.

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants 170 . No significant cross-media effects occur.

For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values specified by **Kenyan law for new medium combustion plants (requires additional research)**.

F) Sustainable resource use and circularity

N/A

4.14. Cogeneration of heat/cool and power from renewable non-fossil gaseous and liquid fuels

KeSIC code: No specific KeSIC code

Description of economic activity

Construction and operation of combined heat/cool and power generation facilities using gaseous and liquid fuels of renewable origin. This activity does not include cogeneration of heat/cool and power from the exclusive use of biogas and bio-liquid fuels

Make Significant Contribution Criteria

A) Climate Change Mitigation

Metrics and thresholds

1. The life-cycle GHG emissions from the co-generation of heat/cool and power from renewable gaseous and liquid fuels are lower than 100gCO₂e per 1 kWh of energy output from the co-generation.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using ISO 14067:2018 193 or ISO 14064-1:2018 194 .

Quantified life-cycle GHG emissions are verified by an independent third party.

2. Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels) that abatement activity complies with the relevant Sections of this Annex, where applicable.

Where the CO₂ that would otherwise be emitted from the cogeneration process is captured for the purpose of underground storage, the CO₂ is transported and stored underground, in accordance with the technical screening criteria set out in "Transport of CO₂" or "Underground permanent geological storage of CO₂" of the KGFT.

3. The activity meets either of the following criteria:

(a) at construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;

(b) at operation, physical measurement of methane emissions are reported and leak is eliminated.

4. Where the activity blends renewable gaseous or liquid fuels with biogas or bioliquids, the agricultural biomass used for the production of the biogas or bioliquids complies with the criteria laid down in "Production of electricity, heating and cooling from Bioenergy" of the KGFT.

B) Climate Change Adaptation

Generic screening criteria for activities Making a Substantial Contribution to climate change adaptation Section 8.2.

Do No Significant Harm Assessment

A) Climate Change Mitigation

The direct GHG emissions of the activity are lower than 270gCO₂e/kWh.

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants 195 . No significant cross-media effects occur.

For combustion plants with thermal input greater than 1 MW but below the thresholds for the BAT conclusions for large combustion plants to apply, emissions are below the emission limit values set out in Annex II of KGFT.

F) Sustainable resource use and circularity

N/A

4.15. Production of heat/cool from renewable non-fossil gaseous and liquid fuels

KeSIC code: No specific KeSIC code

Description of economic activity

Construction and operation of heat generation facilities that produce heat/cool using gaseous and liquid fuels of renewable origin. This activity does not include production of heat/cool from the exclusive use of biogas and bio-liquid fuels.

Make Significant Contribution Criteria

A) Climate Change Mitigation

Metrics and thresholds

1. The life-cycle GHG emissions from the generation of heat/cool using renewable gaseous and liquid fuels are lower than 100gCO₂e/kWh.

Life-cycle GHG emissions are calculated based on project-specific data, where available, using ISO 14067:2018 199 or ISO 14064-1:2018 200 .

Quantified life-cycle GHG emissions are verified by an independent third party.

2. Where facilities incorporate any form of abatement (including carbon capture or use of decarbonised fuels), that abatement activity complies with the relevant Sections of this Annex, where applicable.

Where the CO₂ that would otherwise be emitted from the electricity generation process is captured for the purpose of underground storage, the CO₂ is transported and stored underground, in accordance with the technical screening criteria set out in "Transport of CO₂" or "Underground permanent geological storage of CO₂" of the KGFT.

3. The activity meets either of the following criteria:

(a) at construction, measurement equipment for monitoring physical emissions, such as methane leakage is installed or a leak detection and repair program is introduced;

(b) at operation, physical measurement of methane emissions are reported and leak is eliminated.

4. Where the activity blends renewable gaseous or liquid fuels with biogas or bioliquids, the agricultural biomass used for the production of the biogas or bioliquids complies with the criteria laid down in "Production of electricity, heating and cooling from Bioenergy" of the KGFT.

B) Climate Change Adaptation

N/A

Do No Significant Harm Assessment

A) Climate Change Mitigation

The direct GHG emissions of the activity are lower than 270gCO₂e/kWh.

B) Climate Change Adaptation

Generic DNSH criteria section 8.3.1.

C) Sustainable use of water and marine resources

Generic DNSH criteria section 8.3.2.

D) Ecosystem protection and restoration

Generic DNSH criteria section 8.3.3.

E) Pollution prevention

Emissions are within or lower than the emission levels associated with the best available techniques (BAT-AEL) ranges set out in the latest relevant best available techniques (BAT) conclusions, including the best available techniques (BAT) conclusions for large combustion plants 170 . No significant cross-media effects occur.

F) Sustainable resource use and circularity

N/A

Activities eligible in the KGFT first edition but without technical screening criteria developed:

4.16. Manufacture of Biomass, Biogas or Biofuels

4.17. Production of electricity, heating and cooling from gravity potential energy