



# Second Opinion

## COSMO ENERGY HOLDINGS CO.,LTD.

July 31, 2024

### Green Finance Framework

Sustainable Finance Division  
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Rating and Investment Information, Inc. (R&I) has confirmed the alignment of the Green Finance Framework of COSMO ENERGY HOLDINGS CO.,LTD. (Cosmo Energy HD) formulated in July 2024 with the following principles and guidelines:

- Green Bond Principles (2021, ICMA)
- Green Loan Principles (2023, LMA, etc.)
- Green Bond Guidelines (2022, Ministry of the Environment)
- Green Loan Guidelines (2022, Ministry of the Environment)

#### ■ Use of Proceeds

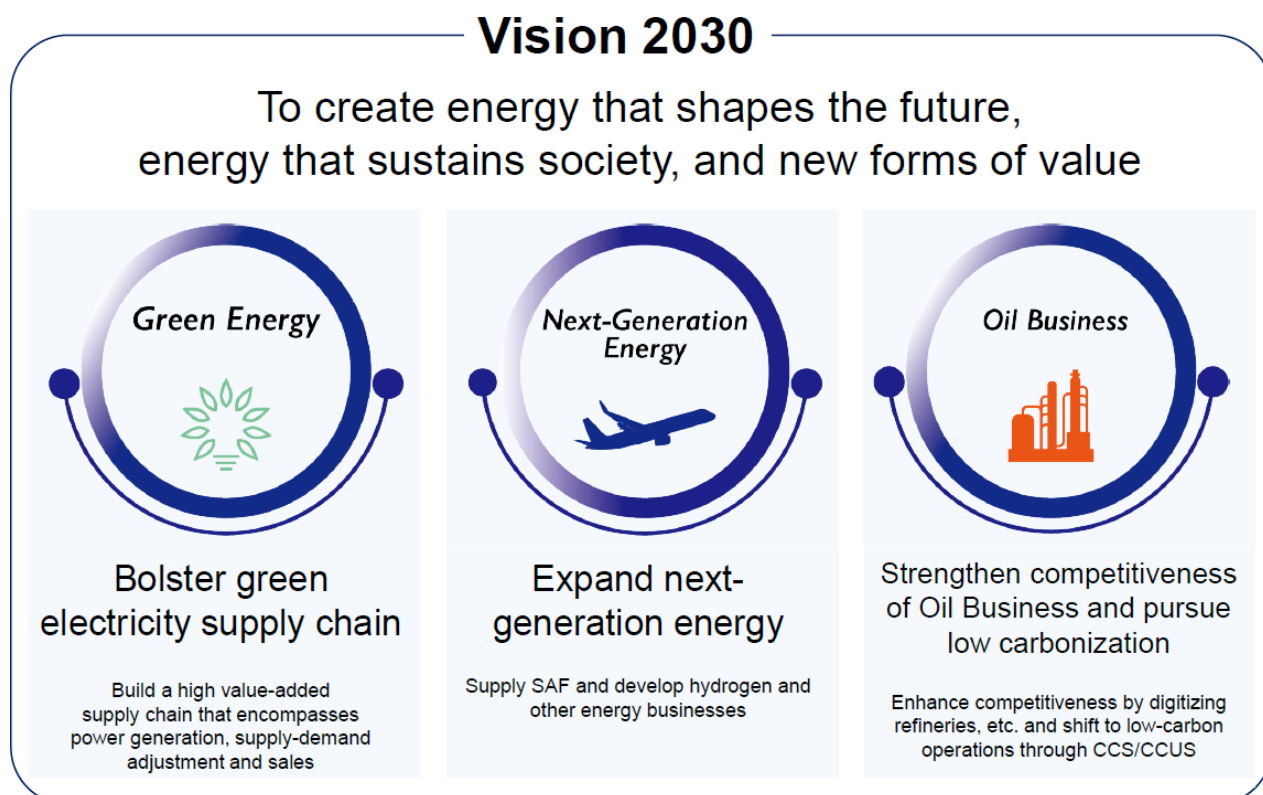
| Priority Themes   | Eligibility Criteria (Project Category)   | Examples of Applicable Projects   | Environmental Objectives                                    |
|---|---|---|---|
| Bolster the green electricity supply chain                      | Renewable energy<br><ul style="list-style-type: none"> <li>• Offshore/onshore wind power, solar power</li> </ul> (Renewable energy) | Expenditure for wind and solar power generation projects to achieve over 2,000 MW of the renewable energy generation facility capacity by 2030 (development, facilities, operation, investment, repair, etc.) | Climate change mitigation                                   |
|   | EV<br>(Clean transportation)  | Expenditure for introduction of EVs to Cosmo My Car Lease and Cosmo Zero Carbon Solutions (development, facilities, operation, investment)  |   |
|   | Power storage<br>(Renewable energy)   | Expenditure for construction of 500 MW of installed storage batteries by 2030 (mainly renewable energy generations and grid-scale storage batteries) (development, facilities, operation, investment)         |   |
| Initiatives for next-generation energy, raw materials, CCS/CCUS | SAF<br>(Circular economy adapted products, production technologies and processes)   | Expenditure for SAF production to achieve supply of 300,000 KL of SAF by 2030 (use of used cooking oil raw materials and ATJ technology) (development, facilities, operation, investment)                     | Climate change mitigation, transition to a circular economy |

|  |   |  |  |
|--|---|--|--|
|  | <p>Hydrogen and next-generation energy</p> <ul style="list-style-type: none"> <li>• Hydrogen supply chain</li> <li>• Synthetic fuel</li> <li>• Biodiesel</li> <li>• Bio-engine oil</li> </ul> <p>(Circular economy adapted products, production technologies and processes)</p> | <p>Expenditure for construction of hydrogen supply chains (mainly establishment of hydrogen stations and hydrogen production) (development, facilities, operation, investment)</p> <p>Expenditure for carbon recycling and production of biomass products (development, facilities, operation, investment, etc.)</p> |  |
|  | <p>Chemical recycling<br/>(Pollution prevention and control)</p>  | <p>Expenditure for supply of chemical-recycled products using waste plastics (development, facilities, operation, investment)</p>  | <p>Transition to a circular economy</p>                            |
|  | <p>CCS/CCUS<br/>(Circular economy adapted products, production technologies and processes)</p>  | <p>Expenditure for CO2 capture and its utilization in major equipment (development, investment)</p>  | <p>Climate change mitigation, transition to a circular economy</p> |

\* Applicable projects include expenditure of the Cosmo Energy Group companies

## 1. Outline of the Issuer/Borrower

- Founded in 2015, Cosmo Energy HD is a holding company of the Cosmo Energy Group consisting of 47 subsidiaries and 35 affiliates. The Group is mainly engaged in businesses ranging from the independent development of crude oil to import, refining, storage and sale of oil products, and also involved in the business of manufacture and sale of petrochemical products, wind power generation, sale, purchase and management of real estate, construction of petroleum-related facilities and insurance agency, etc.
  - The Cosmo Energy Group Management Vision -- In striving for harmony and symbiosis between our planet, man and society, we aim for sustainable growth towards a future of limitless possibilities -- incorporates the desire for the sustainable growth of the Group and society. The "Harmony and Symbiosis" and "Creating Future Values" constitute the Group's Basic Concept of Sustainability and show its determination to promote sustainability in its management.
  - In March 2023, the Group formulated Vision 2030, a medium to long-term vision that connects its medium-term management plan and the Group Management Vision, with a focus on the three pillars of "Bolster the green electricity supply chain," "Expand next-generation energy" and "Strengthen competitiveness of our Oil Business and pursue low carbonization." The seventh medium-term management plan "Oil & New ~Next Stage~," which was disclosed together with Vision 2030, calls for realizing its business strategy by utilizing non-financial capital, improving profitability through this effort, ensuring a generous capital policy, and expanding its growth businesses in order to maximize enterprise value, looking to fulfill Vision 2030.
- Vision 2030



[Source: Cosmo Energy HD Vision 2030]

## 2. Use of Proceeds

Proceeds will be appropriated to new expenditure or refinancing for projects that meet the eligibility criteria provided in the table on pages 1-2 of this document. In the case of refinancing, projects for which expenditure was made within 36 months preceding the finance are eligible.

The eligible projects identified for the use of proceeds will deliver clear environmental benefits. The use of proceeds is appropriate.

### (1) Eligible Projects and Environmental Benefits

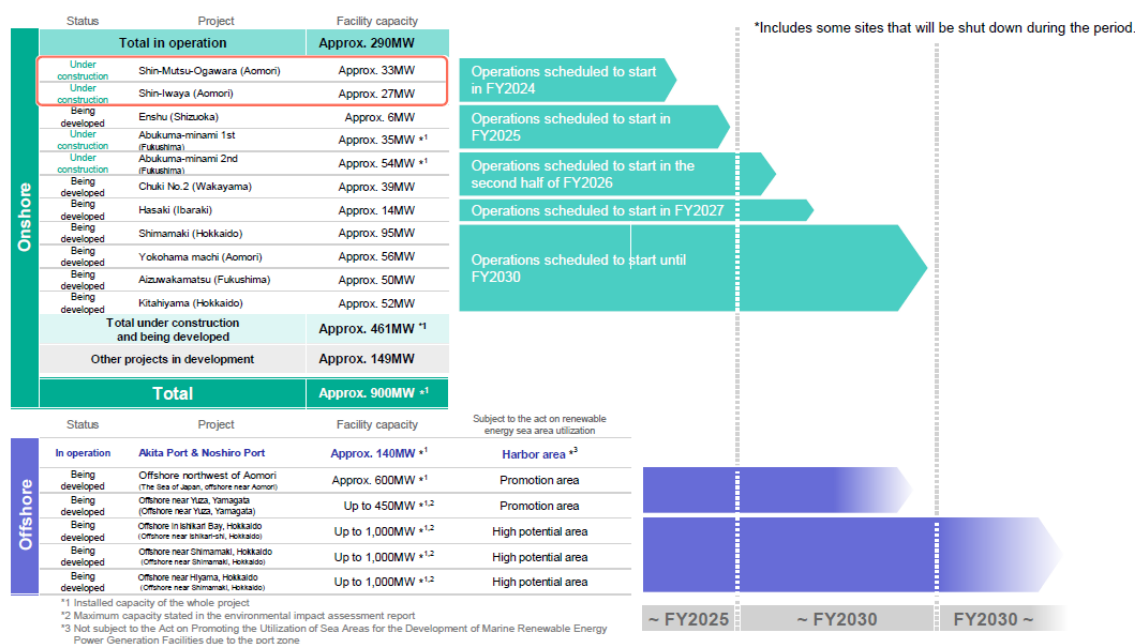
#### Expenditure for wind and solar power generation projects to achieve over 2,000 MW of the renewable energy generation facility capacity by 2030 (development, facilities, operation, investment, repair, etc.)

Project Category: Renewable energy



- Proceeds will be appropriated to the renewable energy business conducted by the Cosmo Energy Group. Vision 2030 includes a renewable energy facility capacity target of 2,000 MW (including wind power of 1,500 MW or more). For wind power generation, the Group has many onshore and offshore development pipelines, primarily through Cosmo Eco Power Co., Ltd., a subsidiary of Cosmo Energy HD that can handle the entire process from development to operation and maintenance. Wind power pipelines are disclosed on a quarterly basis, allowing investors and lenders to confirm the progress of funded projects and the status of operation regularly. The Group plans to discuss initiatives for solar power generation as a new power source in the renewable energy business.
- The Group will reduce CO2 emissions by appropriating proceeds to necessary expenditure for the development, capital investment, operation, etc. of renewable energy sources and replacing electricity from the power grid. Environmental benefits will be indicated in terms of CO2 emissions reduction or contribution to reduction.

#### ■ Wind power pipelines of the Cosmo Energy Group



[Source: Cosmo Energy HD FY2023 full-year financial result presentation]

**Expenditure for introduction of EVs to Cosmo My Car Lease and Cosmo Zero Carbon Solutions (development, facilities, operation, investment)**

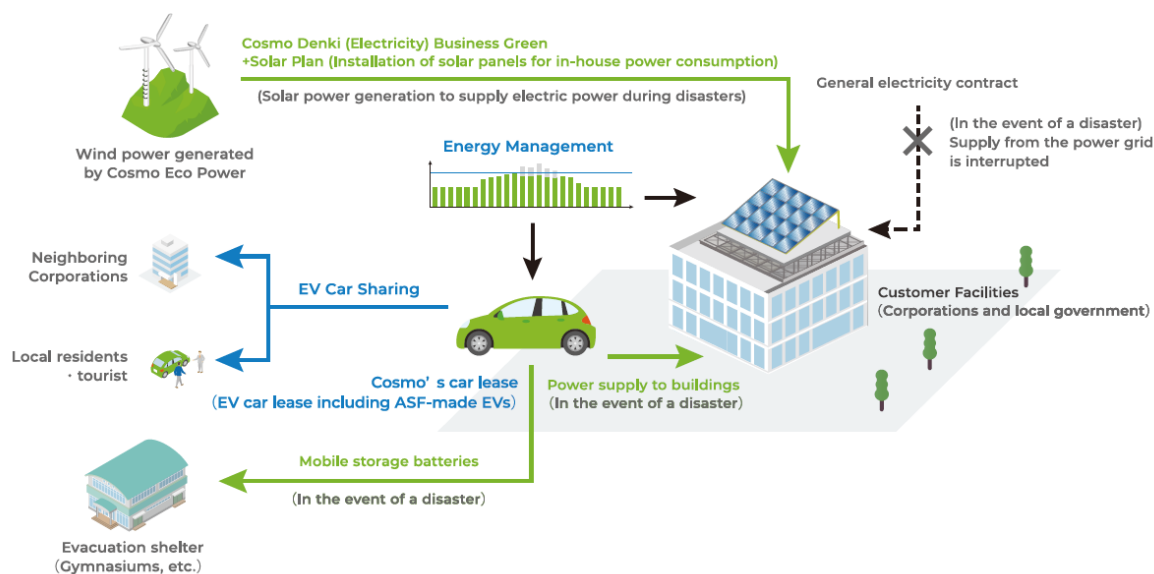
Project Category: Clean transportation



- The Cosmo Energy Group's car lease business serves individuals by taking advantage of high frequency of customer contact at service stations. It also provides services to corporations and local governments through direct marketing and has recently started offering light-duty commercial electric vehicles (EVs). Moreover, the Group engages in the EV car sharing business. Proceeds will be appropriated to expenditure required to expand the introduction of EVs in the Group's car lease and car sharing businesses and transform these businesses to achieve net zero carbon emissions in the future.
- Besides introducing EVs in car leasing and car sharing, the Cosmo Energy Group has rolled out Cosmo Zero Carbon Solutions by combining the Group's assets and solutions related to renewable electricity. This enables the decarbonization of the electricity used to drive EVs through the provision of EV leasing, renewable electricity, charging equipment installation and other services as a one-stop solution, as well as through car sharing services that offer EVs charged with renewable electricity at service stations.
- Expanding the introduction of EVs in the car lease and car sharing businesses and offering them to customers will help reduce emissions from vehicles in operation. By combining this with the initiative to supply renewable electricity to EVs used in car leasing and car sharing services, the Group will also contribute to the construction of a green electricity supply chain from the demand side. Environmental benefits will be indicated in terms of CO2 emissions reduction or contribution to reduction through the introduction of EVs. For projects where assessments based on quantitative indicators are difficult, such as those in their R&D stage, however, their summary, progress and other qualitative information will be presented.

■ Overall picture of the Cosmo Energy Group's Cosmo Zero Carbon Solution

**Overview of Cosmo Zero Carbon Solution**



[Source: Provided by Cosmo Energy HD]

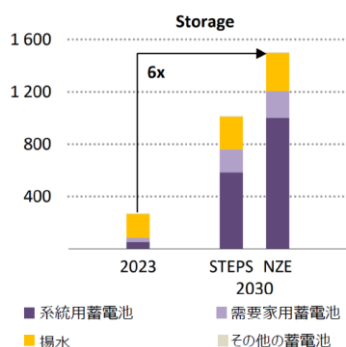
**Expenditure for construction of 500 MW of installed storage batteries by 2030 (mainly renewable energy generations and grid-scale storage batteries) (development, facilities, operation, investment)**

Project Category: Renewable energy

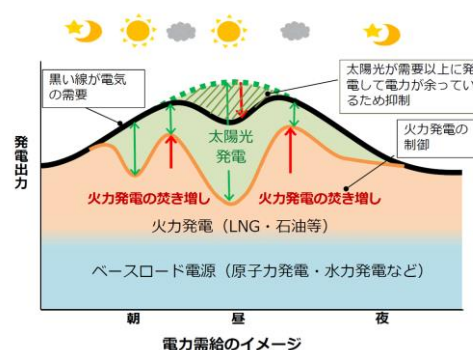


- Proceeds will be appropriated to expenditure required for the introduction and operation of storage batteries connected to the power grid or renewable energy sources. R&I has confirmed with Cosmo Energy HD that the projects to be funded under this criterion are limited to storage batteries connected to low-carbon or carbon-free power sources such as renewable energy sources, or those connected to the power grid.
- The Cosmo Energy Group has commenced several validation projects in its power storage business. Validation of grid-scale storage batteries is underway at the Cosmo Oil Research & Development Center. A plan is to charge the storage battery system during the morning and afternoon when solar power generation facilities reach peak output and discharge it during evening hours or other times when power companies struggle to meet demand. Another validation project is going on at service stations operated by the Group, to determine the optimal charging and discharging of storage batteries based on the amount of electricity generated by the existing solar power generation system and service stations' electricity demand forecasts.
- Storage batteries contribute to the initiative to make renewable energy a main power source, by helping avoid imbalances in renewable energy and enabling adjustments with their features (e.g., instantaneous discharge capability, bidirectional charging capability). According to the International Energy Agency (IEA)<sup>1</sup>, global energy storage capacity will need to increase sixfold by 2030 to achieve the goal of tripling renewable energy capacity by 2030 as agreed at the 28th Conference of Parties of the United Nations Framework Convention on Climate Change (COP28). In Japan, the Advisory Committee for Natural Resources and Energy<sup>2</sup>, which is holding discussions toward the formulation of the Seventh Strategic Energy Plan, reiterates the importance of securing the adjustment capability of storage batteries and others to realize the next-generation power network.
- The expansion of introduction of storage batteries connected to the power grid or renewable energy sources aimed at building the green electricity supply chain will help cut down on CO2 emissions by reducing output restrictions on renewable energy sources and offering adjustment functions that have been provided by thermal power. Environmental benefits will be indicated in terms of power storage capacity of the storage batteries introduced. For projects where assessments based on quantitative indicators are difficult, such as those in their R&D stage, however, their summary, progress and other qualitative information will be presented.

■ Global energy storage capacity needed



■ Necessity of adjustment capability in the power grid



[Source: Advisory Committee for Natural Resources and Energy] [Source: Agency for Natural Resources and Energy website]

<sup>1</sup> Batteries and Secure Energy Transitions - World Energy Outlook Special Report (April 2024)

<sup>2</sup> Strategic Policy Committee of the Advisory Committee for Natural Resources and Energy, doc. 1 for the 58th meeting

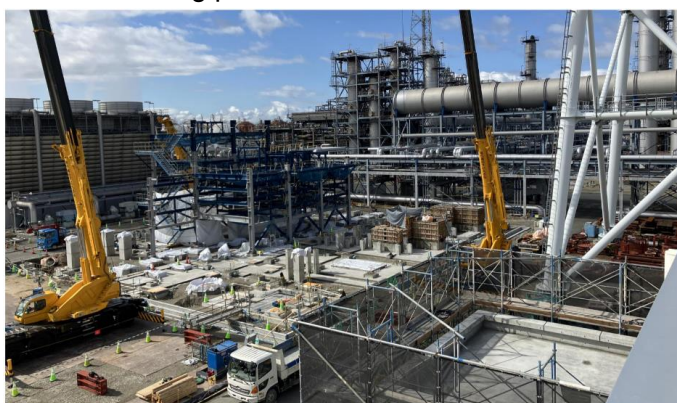
**Expenditure for SAF production to achieve supply of 300,000 KL of SAF by 2030 (use of used cooking oil raw materials and ATJ technology) (development, facilities, operation, investment)**

Project Category: Circular economy adapted products, production technologies and processes

Relevant SDGs:   

- Proceeds will be appropriated to expenditure for the production of sustainable aviation fuel (SAF). R&I confirmed with Cosmo Energy HD that in the projects to be funded under this criterion, the company plans to use feedstock that does not cause competition with food production (or non-edible materials) or feedstock that does not have negative environmental or social impacts or that has mitigation measures in place in accordance with the Group's Environmental Policy, Human Rights Policy and Sustainable Procurement Policy.
- While biofuels, when combusted, do emit CO2 like fossil fuels, the plants used as raw materials absorb CO2 during photosynthesis as they grow, which makes such fuels carbon neutral. To be used for the decarbonization of aircraft, SAF must be certified<sup>3</sup> by a third-party body against the sustainability criteria under the Sustainable Certification Scheme of the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). R&I confirmed with Cosmo Energy HD that the company aims to obtain the said certification in the SAF production business that the Cosmo Energy Group conducts toward commercial operation.
- Specifically, efforts are underway to establish a supply chain model for SAF sourced from used cooking oil together with other companies<sup>4</sup> with support from the New Energy and Industrial Technology Development Organization (NEDO). This project will also help reduce waste in final disposal, because used cooking oil is collected and recycled as a fuel.
- R&D, investments in manufacturing facilities and other activities for SAF production will replace or reduce the fossil fuels used, thereby contributing to CO2 emissions reduction and the realization of carbon neutrality. Environmental benefits will be indicated in terms of quantitative indicators such as the amount of SAF product production, CO2 emissions reduction and contribution to reduction. For projects where assessments based on quantitative indicators are difficult, such as those in their R&D stage, however, their summary, progress and other qualitative information will be presented.

■ SAF manufacturing plant under construction



[Source: Cosmo Oil's presentation at NEXT2024, a next-generation fuel forum in Kansai]

<sup>3</sup> The certification scheme involves a process that confirms the CO2 reduction effect of a project using the life cycle CO2 emission factors defined by the International Civil Aviation Organization (ICAO) according to feedstock and manufacturing technology.

<sup>4</sup> The project led by SAFFAIRE SKY ENERGY LLC, which was jointly established by Cosmo Oil Co., Ltd., Revo International Inc. and JGC Holdings Corp., will target annual SAF production on the level of 30,000 kiloliters, seeking to become the first large-scale domestic producer of SAF in Japan. The fuel will be sourced entirely from used cooking oil. A plant is scheduled to be completed and start operation by the end of FY2024.

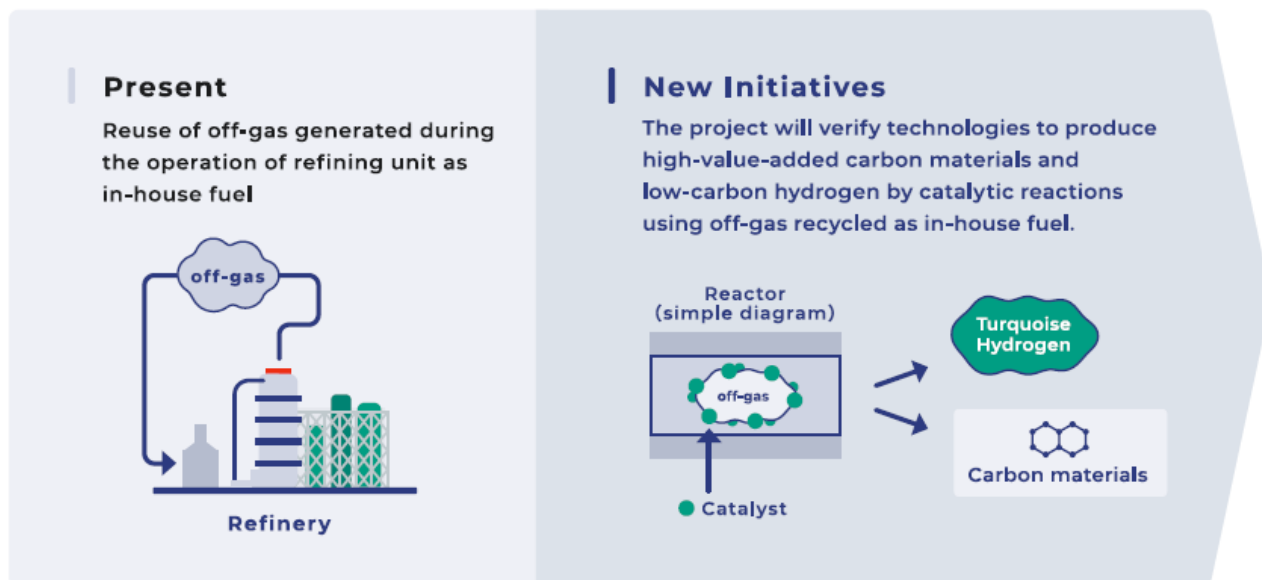
**Expenditure for construction of hydrogen supply chains (mainly establishment of hydrogen stations and hydrogen production) (development, facilities, operation, investment)**

Project Category: Circular economy adapted products, production technologies and processes

Relevant SDGs:   

- Proceeds will be appropriated to expenditure for the construction of hydrogen supply chains by the Cosmo Energy Group. R&I confirmed with Cosmo Energy HD that the projects to be funded under this criterion are limited to those that manufacture, supply, sell or use low-carbon hydrogen that meets the target set out in Japan's Basic Hydrogen Strategy (currently 3.4 kg-CO2/kg-H2<sup>5</sup>) (in the case of R&D projects, those aimed at achieving this target).
- The Cosmo Energy Group is building hydrogen supply chains mainly in production and supply processes. As regards the production process, it has commenced discussions about a technology of producing a valuable carbon material and turquoise hydrogen<sup>6</sup> using off-gas from fractions generated at refineries. In the supply process, hydrogen stations have been launched.
- Replacing and reducing the fossil fuels used in vehicles, etc. through R&D and capital investments toward the construction of supply chains for low-carbon hydrogen production and supply will contribute to CO2 emissions reduction and the realization of carbon neutrality. Environmental benefits will be indicated in terms of quantitative indicators such as the amount of low-carbon hydrogen supply, CO2 emissions reduction and contribution to reduction. For projects where assessments based on quantitative indicators are difficult, such as those in their R&D stage, however, their summary, progress and other qualitative information will be presented.

■ Turquoise hydrogen



[Source: Provided by Cosmo Energy HD]

<sup>5</sup> The target for low-carbon hydrogen pursued by Japan is defined in the Basic Hydrogen Strategy revised by the Ministerial Council on Renewable Energy, Hydrogen and Related Issues in June 2023. This target, in no way inferior to other countries', is set as a level equivalent to a 70% reduction compared to the procurement of hydrogen produced through a methane steam reforming process. For CO2 emissions calculation, a well to production gate approach (i.e., from raw material production to the outlet of hydrogen production equipment) is adopted.

<sup>6</sup> Turquoise hydrogen is produced from natural gas via direct pyrolysis. Solid carbon, not carbon dioxide, is produced as a by-product, and thus is not released into the atmosphere. Of the solid carbon obtained, carbon nanotubes, graphene and carbon black will be used as a material for battery parts, for example. Other types of carbon generated will be immobilized and used as soil amendments or materials for asphalt, aggregate, etc.



## **Expenditure for carbon recycling and production of biomass products (development, facilities, operation, investment, etc.)**

Project Category: Circular economy adapted products, production technologies and processes

Relevant SDGs:   

- Proceeds will be appropriated to R&D, capital investments and other activities for carbon recycling and the production of biomass-based products. R&I confirmed with Cosmo Energy HD that the projects to be funded under this criterion and an approach to the amount of appropriation are as follows:
  - As with SAF projects, biomass that does not have negative environmental or social impacts or that has mitigation measures in place will be used as feedstock.
  - For projects related to synthetic fuels and biofuels for vehicles, the projects to be funded under this criterion are limited to those manufacturing products that meet the CO<sub>2</sub> emissions savings compared to fossil fuels required by an EU directive<sup>7</sup> (at least a 65% reduction for biofuels produced in installations that started operation in 2021 or later) (in the case of R&D projects, those aimed at achieving this target).
  - If proceeds are appropriated to investments in manufacturing facilities that are also used in the production of products that do not use biomass-based or CO<sub>2</sub>-based feedstock, the capital expenditure calculated on a pro rata basis according to planned or actual production will act as a cap on appropriation.
- In carbon recycling, CO<sub>2</sub> emitted from refineries and other facilities will be converted into valuable resources (e.g., petrochemical alternatives, synthetic fuels). Currently, discussions are underway about the feasibility and investment profitability of several processes in collaboration with companies with cutting-edge technologies. The projects to be funded under this criterion are those for processes after CO<sub>2</sub> separation and capture, as the process of CO<sub>2</sub> separation and capture is covered by CCS/CCUS projects.
- Biomass products can be broadly divided into biofuels for vehicles and biomass-based products other than fuels. Cosmo Energy HD manufactures bio-ETBE<sup>8</sup>, a biofuel for vehicles derived from bio-ethanol. If expenditure for R&D and investments in manufacturing facilities aligned with the above-mentioned CO<sub>2</sub> emissions savings target, etc. is expected to continue, the company will consider selecting this initiative as a candidate for an eligible project under this criterion. Efforts for biomass-based products include the production of diesel engine oil from plant-based sources. While engine oil, when disposed of (combusted), does emit CO<sub>2</sub>, the plants used as raw materials absorb CO<sub>2</sub> as they grow, which helps reduce CO<sub>2</sub> emissions on a life cycle basis compared to engine oil derived from fossil resources.
- Replacing and reducing the fossil fuels used in vehicles, etc. through R&D, investments in manufacturing facilities and other activities for carbon recycling and the production of biomass-based products will contribute to CO<sub>2</sub> emissions reduction and the realization of carbon neutrality. Environmental benefits will be indicated in terms of quantitative indicators such as CO<sub>2</sub> emissions reduction and contribution to reduction. For projects where assessments based on quantitative indicators are difficult, such as those in their R&D stage, however, their summary, progress and other qualitative information will be presented.

<sup>7</sup> DIRECTIVE (EU) 2018/2001

<sup>8</sup> ETBE stands for ethyl tertiary-butyl ether. It is a chemical substance produced from ethanol and isobutylene and can be blended with gasoline up to approximately 7%. Cosmo Energy HD manufactures bio-ETBE using bio-ethanol as feedstock.

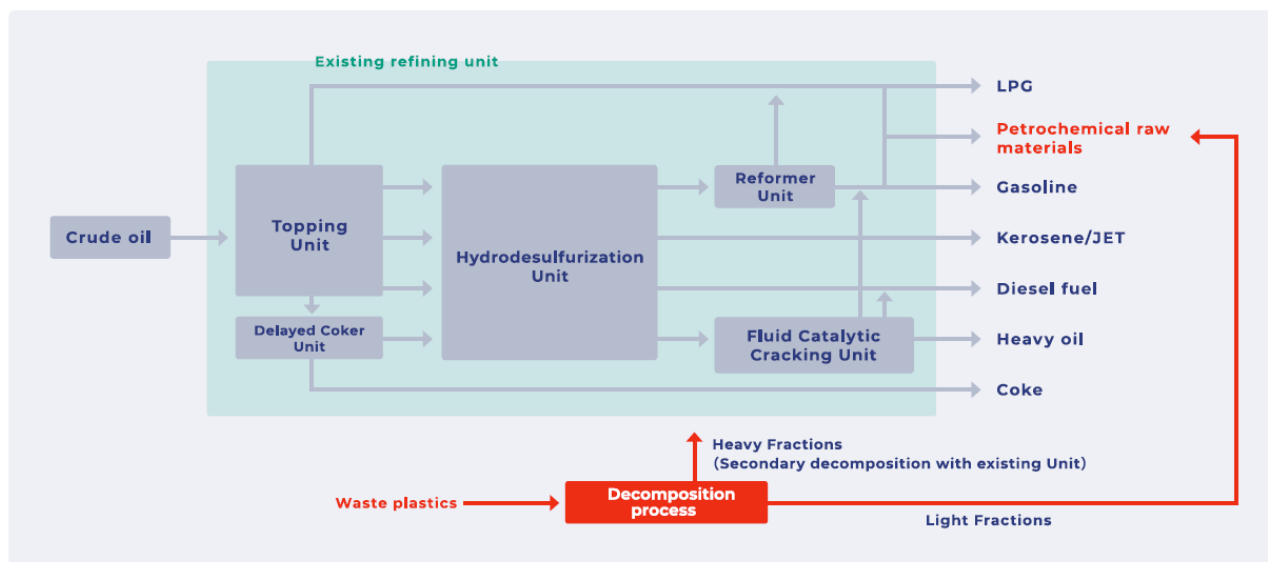
**Expenditure for supply of chemical-recycled products using waste plastics (development, facilities, operation, investment)**

Project Category: Pollution prevention and control

Relevant SDGs:

- Proceeds will be appropriated to expenditure for supply of chemical-recycled products using waste plastics. R&I confirmed with Cosmo Energy HD that the products manufactured in the projects to be funded under this criterion are limited to those that do not increase CO2 emissions on a life cycle basis compared to fossil fuel-based products (in the case of R&D projects, those aimed at its achievement).
- The Cosmo Energy Group is currently working to develop chemical recycling technologies that enable the manufacture of olefins<sup>9</sup> and aromatics<sup>10</sup> through the direct decomposition of waste plastics<sup>11</sup>. The process achieves greater efficiency by decomposing waste plastics into olefins and aromatics using a catalyst and further decomposing a heavy by-product into olefins and aromatics in the existing petroleum refinery process. This initiative will help cut down on waste plastics combusted and also reduce fossil resources used as feedstock as well as CO2 emissions from olefin production.
- R&D, investments in manufacturing facilities and other activities for the chemical recycling of waste plastics to produce chemical products will contribute to reducing waste in final disposal. Environmental benefits will be indicated in terms of quantitative indicators such as the amount of product supply and waste reduction. For projects where assessments based on quantitative indicators are difficult, such as those in their R&D stage, however, their summary, progress and other qualitative information will be presented.

■ Chemical recycling business



[Source: Provided by Cosmo Energy HD]

<sup>9</sup> Olefins refer to unsaturated hydrocarbons such as ethylene, propylene and butadiene.

<sup>10</sup> Aromatics refer to aromatic hydrocarbons such as benzene, toluene and xylenes.

<sup>11</sup> The initiative was selected as a NEDO Green Innovation Fund project to develop technologies for producing raw materials for plastics using CO2 and other sources.

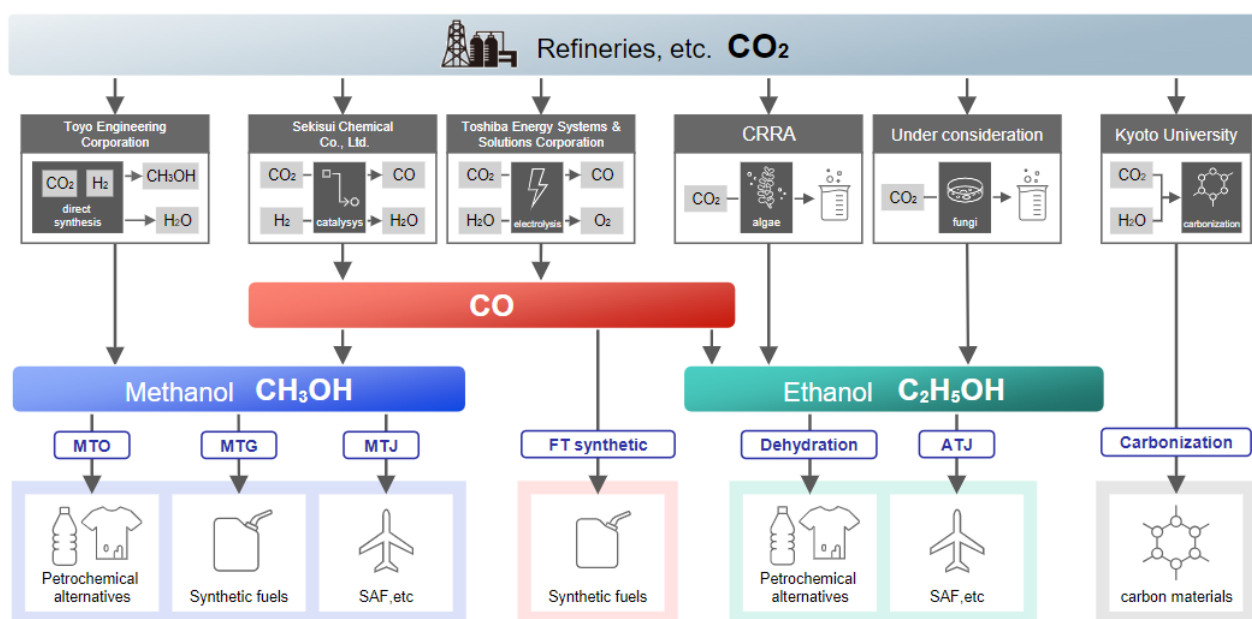
**Expenditure for CO2 capture and its utilization in major equipment (development, investment)**

Project Category: Circular economy adapted products, production technologies and processes

Relevant SDGs:   

- Proceeds will be appropriated to R&D, demonstration and investments in gaining technological knowhow that enable the separation, capture and utilization of CO2 generated at refineries and other facilities, primarily for its use as feedstock for carbon recycling.
- As described on page 9 of this document, the Cosmo Energy Group is working on CCUS to capture and utilize CO2 in carbon recycling. The eligible projects under this criterion are those for the process of CO2 separation, capture and utilization in carbon recycling and in their R&D or demonstration stage.
- R&D, demonstration and other activities for the separation, capture and utilization of CO2 generated at refineries and other facilities will help build a carbon recycling process for the effective use of CO2 and the realization of a circular economy and carbon neutrality. Since the initiative is in the R&D stage, environmental benefits will be presented in the form of a project summary, progress and other qualitative information.

■ Direction of the Cosmo Energy Group's carbon recycling initiative



[Source: Cosmo Energy HD FY2023 ESG presentation]

### 3. Process for Project Evaluation and Selection

Environmental objectives, criteria, a decision-making process for evaluation and selection, and a process for identifying, mitigating and managing environmental and social risks have been defined. A process is in place to select projects that give due consideration to the environment and society. The process for project evaluation and selection is appropriate.

#### (1) Environmental Objectives

- Environmental objectives of green projects (environmental merits to be achieved through green finance) are provided in the table on pages 1-2 of this document.

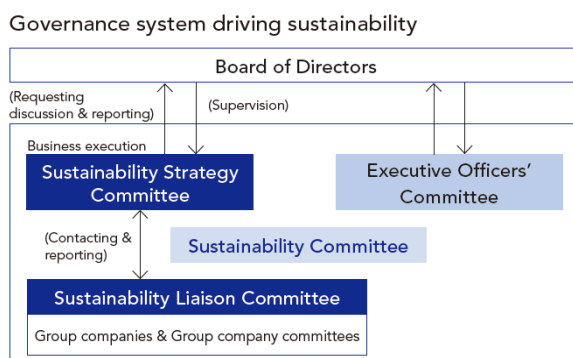
#### (2) Criteria

- Those that satisfy the eligibility criteria for each project category and examples of applicable projects provided in the table on pages 1-2 of this document will be selected as projects to be funded by proceeds.
- The environmental objectives tied to the eligibility criteria for each project category are consistent with the Cosmo Energy Group's basic approach to sustainability and materiality related to the environment. The projects to be funded by proceeds based on their fulfillment of the eligibility criteria and examples of applicable projects will contribute to the achievement of the Group's objectives and strategies for environmental sustainability.

#### The Cosmo Energy Group's basic approach and promotion structure for sustainability

- Since more than 20 years ago, sustainability has been at the core of the Cosmo Energy Group's business operations, as stated in the Cosmo Energy Group Management Vision, and the Group has consistently placed great importance on environmentally-focused management. The pursuit of sustainable value enhancement and development based on the Group Management Vision is the cornerstone of sustainability at the Cosmo Energy Group. Under this management vision, the Group reviewed its materiality in April 2023 and set non-financial KPIs to promote initiatives.
- The Sustainability Strategy Committee plays a central role as an organization that oversees sustainability-related activities, including internal controls, aiming to realize the Group Management Vision. The Committee is composed of top executive officers, including the Group CEO, as well as the CEOs and executive officers in charge of sustainability at the three core operating companies, and directors who are members of the Audit and Supervisory Committee attend as observers. It discusses policies for sustainability activities, monitors and evaluates performance, and reports important matters to the Board of Directors. An organizational structure for promoting sustainability is in place.

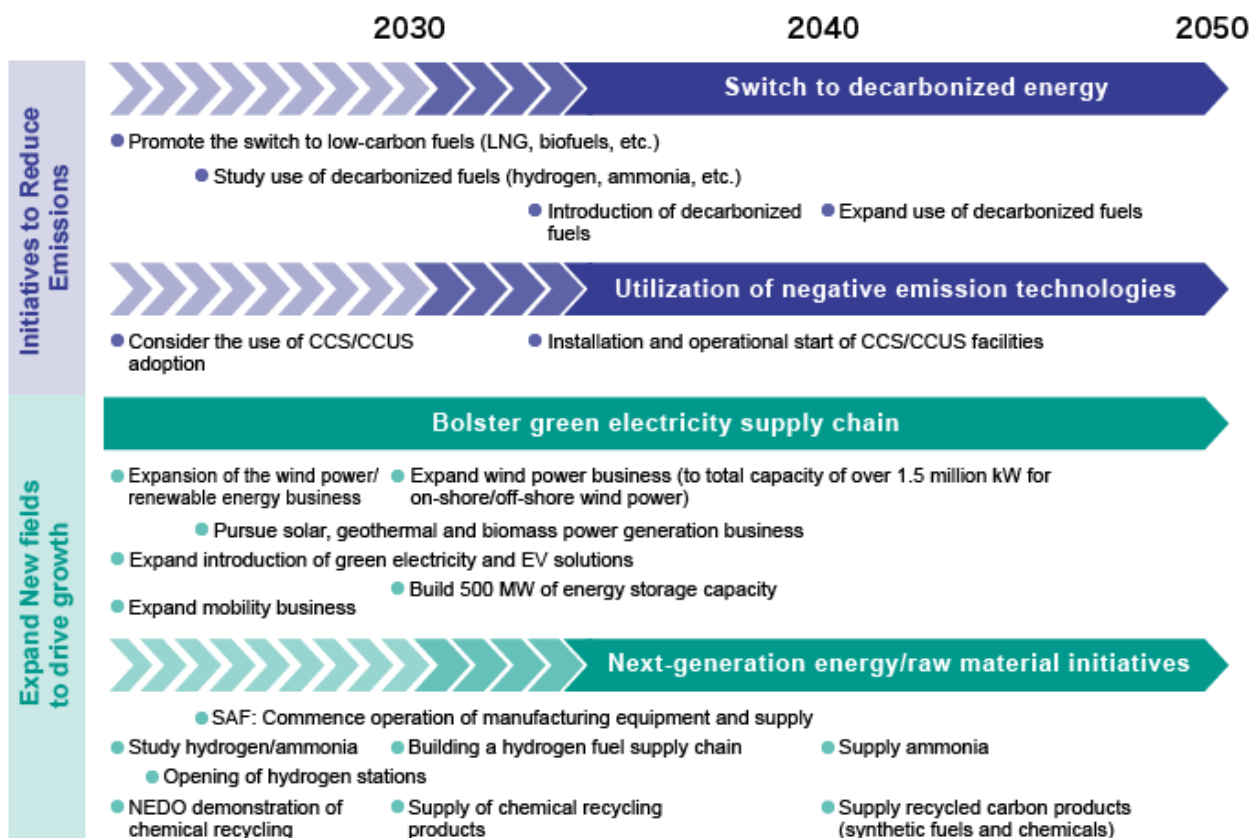
#### ■ Sustainability promotion structure of the Cosmo Energy Group



[Source: Cosmo Energy HD Cosmo Report 2023]

### The Cosmo Energy Group's comprehensive environmental objectives and strategies

- Cosmo Energy HD identified "Climate change countermeasures" and "Provision of clean energy, products, and services" as its materiality on the environmental front, and formulated a roadmap for achieving net zero carbon by 2050 that summarizes a basic approach and procedures for realizing net zero carbon.
  - The roadmap contains an interim target of reducing CO2 emissions by 2 million tons, or 30% compared to 2013, in 2030 through the conversion to zero-carbon energy and the utilization of negative emissions technologies, while fulfilling the Group's responsibility to provide a stable supply of energy, and a long-term target of contributing to the carbon neutrality of society as a whole by achieving net zero carbon emissions, including Scope 3, by 2050.
  - The strategies for meeting these targets are centered on "efforts to reduce emissions" and "development of New fields." "Efforts to reduce emissions" include energy conservation, fuel conversion and the introduction of renewable energy at service stations, primarily for CO2 emissions reduction in the petroleum refining and petrochemical businesses.
  - "Development of New fields" encompasses the expansion of the renewable energy business, the power storage business, the mobility business, SAF production, the construction of hydrogen supply chains and carbon/chemical recycling, which are in line with "Bolster the green electricity supply chain" and "Expand next-generation energy" envisaged in Vision 2030. Cosmo Energy HD seeks to realize a carbon neutral society and the sustainable growth of the Group simultaneously, by decarbonizing the energy and products it supplies to the market. The use of proceeds under the Framework is considered to be initiatives aligned with "development of New fields."
- Basic approach and procedures for achieving net zero carbon



[Source: Cosmo Energy HD website - Roadmap for Achieving Net Zero Carbon by 2050]

■ Priority themes for achieving net zero carbon

**2 Use of negative emissions technologies**

- Study feasibility of CO<sub>2</sub>-EOR technology in oil fields and other locations where Group holds concessions
- Study feasibility of CCS and CCUS technologies to recover CO<sub>2</sub> from major equipment and utilize CO<sub>2</sub>

**3 Bolster green electricity supply chain**

- Aim for total renewable energy generation capacity of 2,000 MW by 2030, including over 1,500 MW of onshore and offshore wind power.
- Study geothermal, solar, and biomass power generation projects utilizing Group technologies, networks, and assets
- Expand green electricity sales to 4 bil.kWh by 2030, in line with value-added services such as installation of rapid EV charging equipment at service stations and provision of EVs through Cosmo My Car Lease and EV car sharing
- Started power storage business validation, aiming to build 500 MW of storage battery function by 2030.
- Contribute to co-creation with local communities

**1 Direct reduction**

- Reduce Scope 1 and Scope 2 emissions through shift to low-carbon fuels (LNG, biofuels, etc.) and decarbonized fuels (hydrogen, ammonia, etc.), introduction of renewable energy, energy conservation, etc.
- Introduce virtually all renewable energy at service stations directly operated by the Group

**5 Use of carbon credits**

- Use negative emissions technologies, reduction contributions from renewable energy projects, carbon credits and other means to cover remaining emission from our own operations that cannot be reduced to achieve 30% reduction (compared to 2013) by 2030 and zero carbon emissions including our supply chain by 2050

**4 Initiatives for next-generation energy/raw materials**

- Further accelerate business development to build SAF supply chain, aim for operation of Japan's first large-scale SAF production facilities and fuel supply 30,000 KL by 2025 and 300,000 KL by 2030
- Use existing assets to open the first hydrogen station in 2024, develop hydrogen stations for trucks and enter the hydrogen supply chain
- Study recycled carbon products (ammonia, synthetic fuels and chemicals) supply
- Study chemical recycling



[Source: Cosmo Energy HD website - Roadmap for Achieving Net Zero Carbon by 2050]

**(3) Decision-Making Process for Evaluation and Selection**

- Eligible projects are ultimately selected by the CFO after candidate projects are selected by the division in charge of finance based on the fulfillment of eligibility criteria and examples of applicable projects, and the finance division and relevant divisions of Cosmo Energy HD have discussions.

**(4) Process for Identifying, Mitigating and Managing Environmental and Social Risks**

- The Cosmo Energy Group has its Environmental Policy, Human Rights Policy and Sustainable Procurement Policy, and all business activities are carried out in accordance with these policies. After ensuring that eligible projects have measures in place to address negative environmental and social impacts based on these policies, Cosmo Energy HD confirms that the facility certification or approval required by the government of the country, region, or municipality where the facilities will be installed has been obtained, and the environmental assessment procedures have been taken appropriately, for the applicable facilities and projects to be selected.

**The Cosmo Energy Group's Environmental Policy, Human Rights Policy and Sustainable Procurement Policy**

- The Environmental Policy sets out the Cosmo Energy Group's basic approach to ensuring that all its business activities are conducted in harmony with the environment. Consisting of nine areas, the policy requires the Group to not only comply with all relevant laws and regulations, but also set its own management standards as necessary and continually strive to improve the level of its environmental management, for instance.

- The Human Rights Policy, which complies with the Guiding Principles on Business and Human Rights, outlines the Cosmo Energy Group's basic approach to respecting human rights. It contains six areas, including support and respect for international norms such as the Ten Principles of the UN Global Compact (UNGC)<sup>12</sup> and the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work<sup>13</sup>.
- The Sustainable Procurement Policy sets forth the Cosmo Energy Group's basic approach to fulfilling its social responsibilities across supply chains to help build a sustainable world. It includes six areas such as legal compliance and fair transactions.
- The Cosmo Energy Group monitors risks by, for instance, implementing a human rights due diligence process and a SAQ (Self-Assessment Questionnaire), which confirms suppliers' understanding and progress, in accordance with these policies, and takes measures for prevention and remediation.
- Since it is ensured that the Cosmo Energy Group's business activities are carried out in compliance with these documents, R&I believes that the eligible projects give due consideration to environmental and social risks.

#### 4. Management of Proceeds

The method of tracking proceeds for their allocation to green projects and the method of managing unallocated proceeds have been identified. The management of proceeds is appropriate.

- Appropriated and unappropriated amounts of proceeds will be tracked annually by the finance division of Cosmo Energy HD to ensure that the net proceeds and the expenditure for the eligible projects are the same. Eligible projects whose implementation entity will be a subsidiary of the company will be managed in the same manner.
- Proceeds will be managed using a dedicated account book. This book will be appropriately managed and maintained in accordance with the document control rules of Cosmo Energy HD.
- All proceeds will be appropriated to eligible projects promptly, and will be managed in cash or cash equivalents until appropriated.

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<sup>12</sup> The UNGC was advocated by Coffey Annan, the then United Nations Secretary-General, at the 1999 World Economic Forum and officially launched in 2000. It is a voluntary initiative that encourages companies to act as good members of society and participate in the creation of a global framework for achieving sustainable growth, and signatories are expected to support and practice the Ten Principles related to human rights, labor, the environment and anti-corruption. Cosmo Energy HD participated in the UNGC in 2006.

<sup>13</sup> Adopted in 1998 at the 86th Session of the International Labour Conference, the ILO Declaration states that all ILO member states should respect the four principles (e.g., freedom of association) concerning workers' fundamental rights. It calls on all ILO member states to implement the principles in accordance with the core Conventions, on which the ILO Declaration is built. The principles and rights identified in the ILO Declaration constitute the portion of the UNGC regarding labor.

## 5. Reporting

The timing, method and items of disclosure (reporting) have been specified. The environmental benefit indicators are consistent with the environmental objectives. The reporting is appropriate.

### (1) Overview of Disclosure

- Reporting will be made as follows:

|                        | Items  | Timing   | Method   |
|------------------------|--|--|--|
| Allocation of Proceeds | <ul style="list-style-type: none"> <li>Appropriated amount for each priority theme and unappropriated amount</li> <li>Management method of unappropriated amount, if any</li> <li>Approximate amount (or percentage) of the portion of proceeds appropriated to refinancing</li> </ul> | Annually disclosed until the full amount of proceeds is appropriated | Either in Cosmo Energy HD's integrated report (Cosmo Report) or website (in the case of loans, those matters may be disclosed to lenders only) |
| Environmental Benefits | <ul style="list-style-type: none"> <li>"(2) Environmental Benefit Indicators" will be disclosed in accordance with the eligibility criteria for which proceeds have been appropriated</li> </ul>   |  |  |

- Prompt disclosure will be made when a significant change occurs in the proceeds appropriation plan, the status of appropriation after proceeds are appropriated, or the operation and management of a funded project.

### (2) Environmental Benefit Indicators

- As regards the environmental benefits of green projects, the items listed below will be disclosed to the extent practicable. The environmental benefit indicators are consistent with the environmental objectives.

| Eligibility Criteria  | Examples of Applicable Projects   | Reporting Items  |
|---|---|--|
| Renewable energy <ul style="list-style-type: none"> <li>Offshore/onshore wind power, solar power</li> </ul> | Expenditure for wind and solar power generation projects to achieve over 2,000 MW of the renewable energy generation facility capacity by 2030 (development, facilities, operation, investment, repair, etc.) | <ul style="list-style-type: none"> <li>Overview and progress of the project</li> <li>Facility capacity (MW) or actual power generation (kWh)</li> <li>CO2 reduction/contribution to reduction (t-CO2)</li> </ul> |
| EV  | Expenditure for introduction of EVs to Cosmo My Car Lease and Cosmo Zero Carbon Solutions (development, facilities, operation, investment)  | <ul style="list-style-type: none"> <li>Overview and progress of the project</li> <li>CO2 reduction/contribution to reduction (t-CO2)</li> </ul>  |



|   |  |   |
|---|--|---|
| <p>Power storage</p>  | <p>Expenditure for construction of 500 MW of installed storage batteries by 2030 (mainly renewable energy generations and grid-scale storage batteries) (development, facilities, operation, investment)</p>   | <ul style="list-style-type: none"> <li>• Overview and progress of the project</li> <li>• Power storage capacity (MW)</li> </ul>   |
| <p>SAF</p>  | <p>Expenditure for SAF production to achieve supply of 300,000 KL of SAF by 2030 (use of used cooking oil raw materials and ATJ technology) (development, facilities, operation, investment)</p>   | <ul style="list-style-type: none"> <li>• Overview and progress of the project</li> <li>• Product production (KL)</li> <li>• CO2 reduction/contribution to reduction (t-CO2)</li> </ul>          |
| <p>Hydrogen and next-generation energy</p> <ul style="list-style-type: none"> <li>• Hydrogen supply chain</li> <li>• Synthetic fuel</li> <li>• Biodiesel</li> <li>• Bio-engine oil</li> </ul> | <p>Expenditure for construction of hydrogen supply chains (mainly establishment of hydrogen stations and hydrogen production) (development, facilities, operation, investment)</p> <p>Expenditure for carbon recycling and production of biomass products (development, facilities, operation, investment, etc.)</p> | <ul style="list-style-type: none"> <li>• Overview and progress of the project</li> <li>• Hydrogen/product supply</li> <li>• CO2 emission reduction/contribution to reduction (t-CO2)</li> </ul> |
| <p>Chemical recycling</p>   | <p>Expenditure for supply of chemical-recycled products using waste plastics (development, facilities, operation, investment)</p>  | <ul style="list-style-type: none"> <li>• Overview and progress of the project</li> <li>• Product supply/waste reduction</li> </ul>  |
| <p>CCS/CCUS</p>   | <p>Expenditure for CO2 capture and its utilization in major equipment (development, investment)</p>  | <ul style="list-style-type: none"> <li>• Overview and progress of the project</li> <li>• Installation of CCS/CCUS</li> </ul>  |

## [Disclaimer]

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## [Expertise and Third-Party Characteristics]

R&I launched the R&I Green Bond Assessment business in 2016, and since then, R&I has accumulated knowledge through numerous evaluations. Since 2017, R&I has been participating as an observer in the Green Bond Principles and Social Bond Principles, which have their own secretariat at the International Capital Market Association (ICMA). It also has been registered since 2018 as an Issuance Supporter (external review entity) of the Financial Support Programme for Green Bond Issuance, a project by the Ministry of the Environment. In 2022, R&I was designated as an external reviewer for transition finance in the global warming countermeasures promotion project of the Ministry of Economy, Trade and Industry.

The R&I assessment method and results are disclosed on the R&I website (at <https://www.r-i.co.jp/en/rating/esg/index.html>).

In December 2022, R&I expressed its support for the intent of and its endorsement of the "Code of Conduct for ESG Evaluation and Data Providers" (ESG Code of Conduct) published by the Financial Services Agency. Disclosures on R&I's compliance with the six Principles of the ESG Code of Conduct and the Guidelines for their implementation are available on the R&I website at <https://www.r-i.co.jp/en/rating/products/esg/index.html> (Disclosures on Compliance with the ESG Code of Conduct).

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