PRESS RELEASE

New Report Provides Manual for Countries to Decarbonize their Power, Industry, Transport and Buildings Sectors by Mid-Century

TO BE RELEASED: September 23, 2019

The United Nations Intergovernmental Panel on Climate Change 2018 Report stated, "Limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society." In recent years it has become clear that that scenario would require not only a transformation of our energy system in order to meet our global emissions targets, but also a rethinking of the way we control the temperature of our homes, travel around our planet, and manufacture our goods.

In order to meet this transformation in by mid-century, scientists, engineers, and technical experts are needed in the crucial role of designing pathways for the decarbonization process of specific, energy-intensive sectors, notably power, industry, transport, and buildings. Fondazione Eni Enrico Mattei (FEEM) and the Sustainable Development Solutions Network (SDSN) invited more than sixty technical experts from around the world to gather in Milan in April 2019 to discuss the state of decarbonization technologies that can accelerate the global shift towards decarbonization.

The **Roadmap to 2050: A Manual for Countries to Decarbonize by Mid-Century** report is the result of this workshop. The report provides an overview of the latest decarbonization technologies available for national governments to populate their low-emission development strategies as outlined in article 4.19 of the Paris Agreement. Following the Paris Climate Agreement's aim to strengthen the global response to the climate crisis "in the context of sustainable development and efforts to eradicate poverty," the report is conceived on a "systems approach," aspiring to simultaneously address multiple objectives and promote policy instruments and technological solutions

that can be used across sectors. The multiple objectives span decarbonization and environmental sustainability, economic prosperity (including poverty reduction), and social inclusion that leaves no one behind.

The report is defined by 4 technical summaries: power, industry, transport, and buildings. In order to make sense of the very complex and integrated system of energy and power, the authors of this report have identified Six Pillars of Decarbonization from which every country can begin to develop their roadmap to decarbonization by mid-century.

SIX PILLARS

ZERO-CARBON ELECTRICITY.
A shift towards zero-carbon electricity mix.

SMART POWER GRIDS.
Systems able to shift among multiple sources of power generation and various end uses to provide efficient, reliable and low-cost systems operations, despite the variability of renewable energy.

ELECTRIFICATION OF END USES.
The penetration of electricity, built on existing technologies, can enable a green conversion for the sectors currently using fossil-fuel energy.

MATERIALS EFFICIENCY.
Improved material choices and material flows, such as reduce, reuse, and recycle to significantly improve materials efficiency.

GREEN SYNTHETIC FUELS.
Deployment of a wide range of potential synthetic fuels, including hydrogen, synthetic methane, synthetic methanol, and synthetic liquid hydrocarbons applicable for harder to abate sectors.

SUSTAINABLE LAND-USE.
Mainly involving the agriculture sector, as it contributes up to a quarter of all greenhouse gas emissions from deforestation, industrial fertilizers, livestock, and direct and indirect fossil-fuel uses.

Roadmap to 2050
A Manual for Nations to Decarbonize by Mid-Century