Institute for Energy Economics and Financial Analysis
IEEFA.org

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Fact Sheet: IEA's "Sustainable Development Scenario" best reflects our global energy future

Reviewing International Energy Agency's scenarios for future global energy demand

The International Energy Agency (IEA) is an independent intergovernmental organisation established in 1974 under the framework of the Organisation for Economic Cooperation and Development (OECD). Each year, the Agency releases a World Energy Outlook report which, among other things, attempts to model global energy demand using various scenarios, including:

1. Sustainable Development Scenario (SDS)
2. New Policies Scenario (NPS)
3. Current Policies Scenario (CPS)
4. 66% 2ºC Scenario

IEEFA believes the Agency's Sustainable Development Scenario is the most likely reflection of the world's energy future.

Sustainable Development Scenario

The Sustainable Development Scenario (SDS) presents the most desirable scenario in terms of human and global safety whereby nations work together to successfully limit climate change, by transforming the energy market and addressing air pollution.

The IEA describes the newer Sustainable Development Scenario developed for World Energy Outlook 2017 as "an integrated approach to achieving internationally agreed objectives on climate change, air quality and universal access to modern energy."

IEEFA believes the Sustainable Development Scenario will gain further weight into the future as demand for action on air pollution and carbon emissions continues to escalate. Although no guarantee, there is a strong possibility this scenario most accurately represents the global energy path forward.

Under the Sustainable Development Scenario, the planet's "carbon budget" will be exhausted as early as 2023 under a 1.5°C target and by 2040 under a 2°C objective.

The Sustainable Development Scenario falls short of tracking a path towards meeting the Paris Agreement's target of restricting global warming to well below 2ºC with any certainty.

A significant decline in thermal coal demand is projected by the Sustainable Development Scenario, with global trade in thermal coal plummeting 59% by 2040.

The -3.7% compound annual decline in world thermal coal trade outlined in the Sustainable Development Scenario is the most likely trend going forward.

New Policies Scenario

The New Policies Scenario (NPS) is the Agency's central scenario. Under this scenario, emissions continue to slowly rise to 2040 and global temperatures will likely increase by at least 2.7°C by mid-century.

The IEA defines the New Policies Scenario as aiming "to provide a sense of where today's policy ambitions seem likely to take the energy sector. It incorporates not just the policies and measures that governments around the world have already put in place, but also the likely effects of announced policies, including the Nationally Determined Contributions made for the Paris Agreement."

Each iteration of the New Policies Scenario released in November in the IEA's annual WEO reports is immediately out-of-date upon release as each report is based on prior year data.

The New Policies Scenario assumes people and countries in the world will *not* take significant action to act on carbon emissions in line with the commitments included in the Paris Agreement, even though most of the world has signed on to do just that.

The New Policies Scenario ignores future increases in climate policy ambition and further continued technology change that is virtually certain to happen. International pressure to act on carbon emissions is growing and will continue to do so into the future.

The New Policies Scenario also fails to take into account continuing gains in efficiency or declining costs of renewable energy and energy storage technology going forward. These trends will drive policy ambition on clean energy worldwide over the coming decades.

Even under the New Policies Scenario, global coal trade declines 5% by 2040, while global coal demand has been revised downwards every year since 2014.

It is IEEFA's opinion that the IEA's Sustainable Development Scenario (SDS) is a more likely reflection of the world's energy future than the New Policies Scenario.

Current Policies Scenario

The Current Policies Scenario (CPS) assumes a possible climate change scenario whereby the globe's carbon dioxide levels continue to increase and the global warming target of 1.5°C is exceeded by as early as 2022.

The IEA defines the Current Policies Scenario as only considering "the impact of those policies and measures that are firmly enshrined in legislation as of mid-2017. It provides a cautious assessment of where momentum from existing policies might lead the energy sector in the absence of any other impetus from government."

By definition, the Current Policies Scenario is consistently out-of-date as any policies and measures that have taken place since mid-2017 are not included. The Current Policies Scenario also ignores policies that make up the Nationally Determined Contributions each country has pledged to adhere to as part of the Paris Agreement.

To accept the Current Policies Scenario as the best indication of the world's energy future is to assume all nations will renege on their commitments to meet their national emissions reduction

targets. As some countries are already meeting their targets, this scenario is not reflective of the true state of the world.

IEA 66% 2ºC Scenario

The IEA has developed an alternative scenario that offers a more definite chance of meeting the Paris target of restricting global warming to well below 2ºC.

In the 66% 2ºC scenario, global policies are set to give the world a 66% chance that the <2ºC Paris target is met through an 'an unparalleled ramp up of all low-carbon technologies in all countries' and the 'rapid phase out of fossil fuel subsidies', including massive increases to carbon pricing and 'extensive energy market reforms' and mandates.

66% 2ºC projects the fastest structural decline for the thermal coal industry.

Although global climate ambition is likely to rapidly increase to meet the Paris commitments, IEEFA believes the Sustainable Development Scenario is currently a more likely representation of the world's energy pathway than the 66% 2°C scenario.

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About IEEFA: The Institute for Energy Economics and Financial Analysis (IEEFA) conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy.