

IEEJ e-NEWSLETTER

No. 54

(Based on Japanese No. 136)

Published: January 21, 2015

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Summary

1. Renewable Energies

Last year, a detailed review of the FIT system was conducted in response to the rapid increase of renewable energy capacities and the consequent withholding of their grid connection. In 2015, the system will be comprehensively reviewed, focusing on the cost burden and target pace of introduction.

2. Energy Conservation

The draft interim report released by the Resource and Energy Agency's Energy Efficiency and Conservation Subcommittee at the end of 2014. There are high hopes for the role of energy conservation in the upcoming discussions on the energy mix.

3. Activities Related to Global Warming in 2015

2015 will be a milestone for both domestic and overseas climate actions, with the international climate action framework beyond 2020 and the associated GHG emission targets and related measures of Japan due to be finalized.

4. China: Will the New Normal Succeed?

2015 is the year for firmly establishing the New Normal. The country aims to grow steadily at 7%, but can it execute the required institutional reforms of the economy? Comprehensive measures for energy and the environment are expected.

5. Middle East: A Year without End

The “Arab Spring” ended as if in a dream. There is an urgent need to take coordinated action against IS. Iran's stance in the nuclear talks is not expected to change. Cutting oil production is a tough option.

6. Russia: Putin Government Stymied by Sanctions and Falling Oil Price

In addition to the economic sanctions by the West, the falling oil price is hitting the Russian economy hard. President Putin remains intransigent, but public support for him could waver if the crisis is prolonged.

7. US: Low Oil Prices and Shale, and Political Gridlock

The plummeting oil price is testing the endurance of shale, which has been supporting the US economy. Heading into the next presidential election, US politics will remain gridlocked.

8. EU: European Gas Situation and the Ukraine Crisis

The energy situation in the EU is likely to remain unstable due to the Ukraine-Russia gas disputes. The gas situation will remain in focus particularly in Southern and Eastern Europe.

9. Energy and Environmental Issues for APEC

In 2014, APEC agreed on the target of doubling the share of renewable energies in the region. However, 2015 will see many challenges, with the definition of renewable energies (whether to include traditional biofuel and large-scale hydropower) left undecided.

1. Renewable Energies

Hisashi Hoshi, Board Member, Director
New and Renewable Energy & International Cooperation Unit

The key events in this area for 2014 were the unexpected rapid expansion of renewable energies and the consequent withholding of connection of licensed capacity. 2015 will see a broader debate on Japan's policy for introducing renewable energies.

At the end of last September, five power companies announced that they would stop responding to applications for licensing and connecting vast amounts of solar PV capacity. This was caused by the nationwide rush of last-minute licensing applications for solar capacity in March to beat the reduction in the purchase price planned from April. The Ministry of Economy, Trade and Industry responded quickly. It set up the Electricity Systems WG in just two weeks after the announcement, established the capacity that the grid can accommodate, planned a response to the immediate issues and drafted rectification to the FIT system in the New and Renewable Energy Subcommittee, which were then announced as the "Revision of the Current System of Operation of the Feed-in Tariff Scheme toward the Maximum Introduction of Renewable Energy" on December 18, 2014.

Withholding grid connection could have affected investor confidence in renewable energies as an "institutional risk". As it turned out, however, the situation benefited the future of renewable energies by establishing a common understanding between the power companies and the third-party committee on the amount of renewable electricity that can be connected, which had been somewhat ambiguous. Furthermore, the subcommittee has come up with improved framework for curtailment of output from PV plants and wind farms, an effective means for stabilizing the grid, such as expanding the scope of curtailment to include facilities smaller than 500 kW, shifting from day-based to hour-based management, and requiring the introduction of a remote control system.

The policy for introducing renewable energies will be keenly discussed in 2015, mainly in the New and Renewable Energy Subcommittee. One of the concerns raised by the recent surge in licensed capacity, in addition to the impact on the grid, was the increase in the surcharge. Suppressing the cost burden will remain a main theme of the discussions. To achieve it, the purchase price and the pace of introduction will need to be set appropriately, as well as a goal for controlling the amount of new capacity.

If these are to be pursued under the current FIT system, it will be necessary to reflect costs more accurately by setting an annual target for the amount of each type of renewable energy and reviewing the purchase price more frequently. One option could be to apply a variable reduction rate to the purchase price based on the amount introduced as is done in Germany, rather than full cost pricing.

Other options could include the bidding system and RPS, Renewable Portfolio Standard. Whereas for the FIT system the price is determined by the government and the volume is determined by the number of private entrants, with the bidding system the government determines the volume while the electricity producers decide the price. Bidding could be an effective approach for mature sectors such as solar PV which has a large number of players and high market fluidity, and where it is relatively easy to build a healthy competitive environment. The UK has been deciding its CfD strike price by bidding since 2014, and Germany is also planning to introduce it in 2017 or later. A broad range of discussions in the New and Renewable Energy Subcommittee is keenly awaited.

2. Energy Conservation

Koichi Sasaki, Senior Researcher, Manager
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In 2014, leveling of the demand for electricity was implemented based on the Energy Conservation Act amended in the previous year, and accordingly, an evaluation of ways to lower peak electricity demand was launched. Further, the Resource and Energy Agency's Energy Efficiency and Conservation Subcommittee held seven meetings to promote energy conservation, and released a draft interim report at year-end. The major proposals of the report are: (1) expansion and improvement of benchmarks of the industrial sector, (2) introduction of business-specific benchmarks in the commercial sector, and (3) mandatory compliance of houses and buildings with the energy conservation standards.

Regarding (1), for which benchmarks have so far been set for ten processes of six sub-sectors, the draft interim report suggests improving the appropriate benchmark indices and target levels, and adding more sub-sectors. The benchmark system is expected to drive efforts for energy conservation, which should preferably be accompanied by promotion of investment in aging facilities.

Regarding (2), a study group is discussing applying benchmarks, like the ones for the industrial sector, to commercial sector such as chain stores and department stores in line with their energy demand structure. Introducing benchmarks would allow an absolute assessment of the energy conservation status, and enable a fairer evaluation of energy saving efforts.

Regarding (3), specific efforts will be launched based on the Basic Energy Plan approved by the Cabinet, which requires new houses and buildings to comply, in steps, with the energy conservation standards by 2020.

An unprecedented level of support would be needed to steadily implement these energy conservation measures. For energy conservation subsidies, a budget of 75 billion yen has been requested for 2015, 1.8 times the budget of 41 billion for 2014. This is expected to boost energy conservation.

Meanwhile, the highlight of energy conservation overseas was the final approval by the European Council of the EU of the "2030 policy framework for climate and energy". This framework includes the goal of cutting primary energy consumption by 27% by improving energy efficiency. However, unlike the goals for GHG reduction and renewable energy introduction, this goal is a non-binding, best-effort target like that for 2020.

Energy conservation will feature heavily in the upcoming discussions on the energy mix that underpins the Basic Energy Plan, and further efforts will be needed from the demand side too. However, it is important to set a realistic target with due consideration of economic efficiency.

3. Activities Related to Global Warming in 2015

Hiroki Kudo, Assistant to Managing Director
Global Environment & Sustainable Development Unit

2015 is a milestone for both domestic and overseas climate action. At the end of November, the 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC) will be held in Paris, France, to discuss and agree on a climate framework beyond 2020 encompassing all member countries. COP 20 held in Peru in 2014 discussed the direction of the Intended Nationally Determined Contributions (INDC) beyond 2020 to be submitted by each country. However, opinions differed widely on key points such as the clear reference to financial aid from developed countries to developing countries, in addition to GHG emissions reduction targets and the measures to achieve them. It is still not certain whether an effective framework will be agreed on in COP21.

In contrast to the top-down approach of the Kyoto Protocol, which involved only developed countries, the new pledge & review approach aims to encompass all countries, including developing countries where GHG emissions will increase the most. The shift from the former to the latter will test the very meaning and effectiveness of the UN framework itself; it will be interesting to see how developed and developing countries deal with this shift in framework. In particular, the category of "developing countries" is broadening, from emerging countries such as the BASIC (Brazil, South Africa, India, China) to least-developed countries (LDCs), and they have slightly different stances in the negotiations. As the main players diverge, which countries will take the lead in the negotiations? There will be much jockeying for leadership in related international conferences leading up to COP21.

The key point of the new framework is that each country will submit emission targets and related policies based on its own circumstances for review in the UNFCCC process. Some expect that this shift from the Kyoto Protocol will make the numerical targets less binding, but under the new framework, each country will be held strictly accountable for its target levels and the feasibility and rationality of the means to achieve them. This means that they must control their own situation and sufficiently assess the intensity of their targets and the effectiveness of their policies, and the countries will be subject to mutual evaluation by other countries. Thus, in the future, more attention will be paid to the MRV (measurement, reporting, verification) procedures for assessment, and how they should be standardized.

The INDC of Japan, which the country has pledged to submit as soon as possible in 2015, should fully consider these characteristics of the new framework. Although Japan is required to submit its INDC, including the GHG emissions reduction target, by the promised date, many uncertainties remain regarding the new energy mix, such as the medium- to long-term nuclear policy, reforms of the energy market structure, and review of the renewable energy policy. The country must work hard yet carefully in preparing the INDC despite the limited time remaining, and must make it convincing for the international community. In considering the INDC, attention will be paid to new mechanisms to evaluate the international contribution of Japan's advanced technologies to curb global warming, such as the Joint Credit Mechanism (JCM), as well as specific measures to introduce them, in addition to ensuring that sustainable economic growth is not impeded.

4. China: Will the New Normal Succeed?

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2014 marked the start of the New Normal. Since its inauguration in 2013, the Xi Jinping leadership has consistently shifted its strategic focus from “economic scale and growth rate” to “the quality and efficiency of growth”, and already in its second year, is leading China out of the "old normal" of high growth at the expense of the environment. Tolerating economic growth to fall short of the 7.5% government target is the best evidence of that shift.

The New Normal has also appeared in the energy area. Preliminary statistics show that energy consumption per GDP (energy-GDP intensity) up to the third quarter of 2014 decreased 4.6% year-on-year, an equivalent reduction exceeding the annual target by 0.7 points, the highest since 2009. Coal consumption dropped by 1.2%, marking the first time in 16 years that China's coal consumption has decreased (based on the results of three quarters). In contrast, non-fossil fuel grew dramatically, with wind power output increasing 7.6% (in terms of electricity sales) year-on-year, and solar PV output doubling from the previous year. Natural gas consumption (output + net imports) increased by 6.8%. Consequently, the country managed to reduce its per-GDP CO₂ emissions (emission intensity) by 5.0%.

The long-cherished ambition to reform the energy-related tax system was also achieved. For instance, the consumption tax for petroleum products was raised twice, on November 29 and December 13, capitalizing on the plummeting international oil prices. The per-liter consumption tax rate was raised by 40% for gasoline from 1 yuan (approx. 20 yen) to 1.4 yuan and by 37.5% for diesel oil from 0.8 yuan to 1.1 yuan. The incremented tax revenue will be spent solely to fund pollution prevention, tackling climate change, energy conservation and the promotion of new energy vehicles. These reforms adapted the comprehensive measures for energy and the environment to the New Normal.

The New Normal will become firmly established in 2015, which is the last year of the Twelfth 5-Year Plan when the Thirteenth 5-Year Plan will also be finalized.

At the Central Economic Work Conference held last December, the Xi leadership adopted an economic management policy of "proactive fiscal policy and prudent monetary policy" and "steady economic growth". The leadership is likely to set a growth target of 7%, in line with the New Normal of economic development which is shifting from high-speed to medium-speed growth. To achieve steady growth, it is necessary to accelerate reforms of the economic system, by reforming the administrative licensing system and the pricing mechanism and allowing private companies to enter monopolistic industries, capital markets and banking. How far the reforms will be implemented must be closely monitored.

With the further enhancement of measures particularly for energy conservation and expansion of non-fossil energies, the goals of the Twelfth 5-Year Plan to reduce energy-GDP intensity by 16% and CO₂ emission intensity by 17% from 2010 levels, and the share of coal in primary energy consumption from 68% to 65% in 2010, are likely to be achieved. Institutionally, the oil and natural gas industries are expected to be deregulated and opened up to private companies. We must also closely monitor the introduction of a carbon tax, separation of electricity transmission and distribution, and liberalization of electricity and natural gas prices. Whether the government can finalize the Thirteenth 5-Year Plan, which will set the path for its domestic commitment to improve air quality and its international commitment to achieve early peaking of CO₂ emissions, is another key point to watch in 2015.

5. Middle East: A Year without End

Koichiro Tanaka, Managing Director &
President of JIME Center

Four years have already passed since the “Arab Spring” and the West’s initial hopes for democratization have evaporated. Each country is still struggling to achieve reforms but only in name. The differing views among countries may hamper them from responding quickly to the threat posed by ISIS, which continued to gain territory in 2014. Further, the Middle East countries are becoming increasingly aware of the waning interest and involvement of the US in the region, which could cause them to act on their own. This trend is likely to spread throughout the region in 2015.

Egypt is undergoing a second chance for its political transition, with just the parliamentary election left to go. However, the shift to democracy has lost momentum and has had little positive effect on Egyptian society, as evidenced by the acquittal of former President Mubarak. The country must remain alert to financial crises and extremist attacks, and so will depend further on the assistance of the Gulf countries, particularly Saudi Arabia. Although the Gulf countries are being hurt by plunging oil prices, they also see the situation as an opportunity to counter US shale and thus are unlikely to cut the production of OPEC for now.

Concerned about Iran's influence on their Arab neighbors such as Yemen, the Gulf kingdoms and emirates are not willing to collaborate with Iran in dealing with the civil war in Syria and responding to ISIS. This attitude is deterring overall interest, hindering the international community’s goal of destroying ISIS. Further, regarding the nuclear talks, which were extended for an additional seven months, the kingdoms and emirates are becoming increasingly distrustful of Iran which seeks to retain its uranium enrichment capabilities, and are frustrated by the West's softening stance. This situation is unlikely to improve dramatically in the near-term. Iran is seeking a comprehensive long-term agreement but is running out of time for negotiations due to the falling oil prices. Although it is seeking the rapid lifting of economic sanctions, it will not dramatically change its stance that the decision is up to the West to make.

The reform policy of the al-Abadi administration to ease domestic strife in Iraq, which played a role in the expansion of ISIS during the first half of 2014, may achieve superficial, rather than sufficient, changes. As heated debate continues on how each country should act to end the humanitarian crisis caused by ISIS, there is concern over the integrity of Iraq, which is being buffeted by the moves of the Kurdistan Regional Government (KRG) and the neighboring Turkey. 2015 may see destabilization of the "shape" of the region, which has been maintained since World War I.

6. Russia: Putin Government Stymied by Sanctions and Falling Oil Price

Shoichi Itoh, Manager, Senior Analyst
Global Energy Group 2, Strategy Research Unit

On December 16, the Central Bank of Russia raised the policy interest rate for the sixth time since early last October from 10% to a surprising 17% to prop up the collapsing ruble. The effort, however, proved to be completely ineffective as the ruble then suffered its greatest slide since the financial crisis in 1998, hitting a record low of 62.5 rubles to the dollar, almost halving since the beginning of the year.

Behind the quick deterioration of the Russian economy is the more than 40% drop in oil prices since last summer, in addition to the economic sanctions by the West over the Ukraine situation. The Central Bank estimates that the country's GDP growth rate could fall to -4.7% for 2015 if oil prices remain at around \$60/bbl. In short, Russia could be in even deeper trouble if the international oil market falls further.

On December 18, at an annual press conference with domestic and overseas journalists, President Putin condemned the West, blaming its sanctions for 25–30% of Russia's economic deterioration, and emphasized the country's tough stance, likening Russia to a bear and saying that "the bear never asks permission". In the annual state-of-the-nation address on December 4, Putin hailed the March annexation of Crimea that triggered the confrontation between Russia and the West as a notable achievement, and once again stirred public patriotism by declaring that the West had been plotting to halt Russia's growth and make it collapse with or without the Ukraine crisis. He suggested that the domestic economy will begin to recover within three to four years and exceed the growth rate of the global economy, although he sounded less than persuasive.

The massive fall of the ruble has caused the domestic inflation rate to exceed 9% (around 6% at the beginning of 2014), and is gradually making life difficult for ordinary people. Putin's biggest mistake regarding the Ukraine crisis was believing that he could drive a wedge between the hard-line US and Europe, which has stronger ties with Russia. If he cannot stop the confrontation from intensifying and its economy continues to worsen, his hopes to strengthen the basis of his power by fueling nationalism is also likely to fail. There are more than three long years until the next presidential election in March 2018. Putin seems to believe that Russia can overcome the current predicament by improving its economic efficiency and by perseverance, but public support cannot be maintained indefinitely just by acting tough against the West. The Ukraine crisis would likely bring about no winner, while damaging the global economy; every effort should be made to resolve the situation swiftly through diplomatic means.

However, the West also has no idea how to solve the crisis. Putin could toughen his stance in desperation. In addition to further destabilization of Ukraine, Russia's problems may have a bigger impact on the global economy in 2015.

7. US: Low Oil Prices and Shale, and Political Gridlock

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For the past five years, the US has been generally optimistic about the supply and demand for energy. Shale gas, which has been boosting domestic gas production since 2008, has caused gas prices to fall. From 2010, the drilling shifted to tight oil due to the widening gap between gas and oil prices, causing oil production to soar from late 2011. Meanwhile, gas production rose again in 2013, impressing that the productivity of shale dramatically improved.

The oil price since June 2014 has tested the robustness of US shale for the first time. The risk and yield ratings of energy stocks worsened in the money market as prices fell, and at year-end, several upstream oil companies announced that they were scaling down investment plans and postponing the public offering of new stocks. A fall in the number of drilling licenses was also reported in the media. Further, in 2014, hydraulic fracturing was banned in several states and municipalities, adding to the pressure on shale development.

Looking back, the growth in shale development resulted from multiple factors: continuous government investment since 1974 after the first oil crisis in unconventional resources, a consistent long-term policy of tax breaks for the development of unconventional resources by oil companies as well as corporate efforts, and the fortunate market environment of the 2000s with high oil prices. With the launch of the Obama administration in the 2008 elections, some within the Democratic Party persistently believe that oil companies are enjoying enormous profits with the help of generous government subsidies. However, shale, which has been propping up jobs and investment in the US manufacturing sector, is now facing a structural shift in the international supply and demand of oil, and thus a far-sighted, carefully-crafted policy is required.

In the 114th Congress that starts in January 2015, the Republican Party will have the largest number of seats in the House of Representatives since the Truman administration of 1945, and will be a majority party in the Senate after an eight-year interval. The 2013-14 Congress, which was historically unproductive as the two parties locked horns, saw little progress in the discussions on the gun control and immigration bills, which President Obama was determined to pass, and consequently resulted in a 16-day shutdown of the government in October 2013. After the mid-term election in November 2014, President Obama and the Republican leadership of Congress each announced their intention to cooperate with the other in running politics. However, on December 16, Senate Majority Leader Mitch McConnell named the construction bill for the Keystone XL pipeline, which carries Canadian oil sands, as the highest priority, and said that this will not hinder offering the clause rider. This implies blocking the EPA's environmental controls such as CO₂ emission control for power plants and the processing of coal ash, which puts the Senate on a collision course with the President. However, as the GOP does not have enough seats in the Senate to override the Presidential veto or block the filibuster, a further two years of political stagnation looks unavoidable.

In 2015, as they head toward the presidential election in 2016, both parties are suffering internal confrontation between liberals versus centrists for the Democrats, and conservatives versus centrists for the GOP. President Obama is likely to push ahead with policies by executive order, which has historically been strengthened by past Republican administrations. This year, the political game in the US could expand to encompass the constitutionality of disrespect for Congress and the exercise of executive orders by the President, in addition to the policies themselves.

8. EU: European Gas Situation and the Ukraine Crisis

Wataru Fujisaki, Senior Researcher
Global Energy Group 1
Strategy Research Unit

In the dispute between Russia and Ukraine over gas, Russia's Gazprom agreed to resume supplying 1 billion m³ of gas for this winter in return for up-front payment by Ukraine's Naftogaz. However, it takes 4 billion m³ to supply Europe with gas without disruption throughout the winter, and this amount is yet to be secured.

In eastern Ukraine, the separatists seized the major Donetsk coalfield, causing a serious shortage of coal in western Ukraine, including Kiev, and forcing the region to urgently import coal from South Africa and Russia. The retail gas price of Ukraine is kept low for political reasons, and residential and industrial gas is sold at 30–40% of the import price. This is causing the losses of gas supply companies to accumulate daily.

Under these difficult circumstances, the Ukrainian government intends to strengthen its ties with Western countries in a bid to reduce its dependency on Russian energy. The EU is planning to support Ukraine by accelerating the upgrading of its energy infrastructure and integrating the Baltic and East European energy markets. It will invest a total of 647 million euros in this infrastructure upgrade, which includes the gas pipeline interconnection project in Eastern Europe and the environmental assessment for construction of the TANAP pipeline that connects Azerbaijan and Europe via Georgia and Turkey. Strengthening the gas pipeline network in Central and Eastern Europe would support Ukraine by enabling more gas to be transported back to the country from storage reserves.

Meanwhile, on December 1, Russia suddenly announced that it was abandoning the South Stream gas pipeline project. Russia's South Stream has been regarded as one of the most promising of the southern gas corridor projects and enjoys the support of many European countries, after the EU-supported Nabucco Pipeline was discontinued. Russia apparently had to drop the South Stream project due to the critical financial situation of the country and its state-owned corporations caused by the collapse of oil prices. Meanwhile, gas consumption is decreasing in the EU, where gas prices are also falling due to fierce competition with other fuels.

Russia must urgently find gas buyers outside the EU. The country has signed a gas supply deal with Turkey as an alternative to South Stream, but it is rumored that Turkey has extracted a good price, taking advantage of its strong position. Further, the TANAP pipeline has now become extremely important for Europe, which is seeking to diversify its gas sources, as it is the only remaining project of the southern gas corridor plan. Turkey, through which the pipeline passes, is now politically stable, being at the beginning of a five-year term of Prime Minister Erdogan who took office last August. The country is expected to gain importance for both gas consumers and suppliers as the gas hub for Southern Europe, just as Germany is for Northern Europe. The moves in Eastern and Southern Europe, including Turkey, must be closely monitored in 2015.

9. Energy and Environmental Issues for APEC

Kazutomo Irie

General Manager

Asia Pacific Energy Research Centre

For APEC, 2014 was 'China's year'. China hosted the leaders' summits and ministerial meetings. Various issues pertaining to energy policy were discussed at the Energy Ministers' Meeting held in September in Beijing. For example, regarding:

- energy security: transportation routes, emergency response capabilities of oil and gas, and the relationship between energy and economic competitiveness;
- energy investment and trade: trade and investment barriers, and connectivity of energy infrastructure; and
- energy efficiency and sustainable community: the Low Carbon Model Town Project, establishment of the APEC Sustainable Energy Center (APSEC), and renewable energy.

Among these many subjects, the expansion of renewable energies attracted the most attention even at the preparation stage. The Ministers agreed to aspire to the target of 'doubling the share of renewables in the APEC energy mix, including electricity generation, from 2010 level by 2030'. APEC, however, is not an international organization based on a treaty but rather a flexible forum for regional cooperation. Therefore, its goal of doubling renewable energies is not binding. As such, consensus was reached without defining which types of renewable energy would be included.

In 2015, energy policy officials will be required to define which renewable energy technologies should be included within the doubling goal. Specifically, whether firewood, a traditional biofuel, should be included. Firewood is widely used in homes in developing regions. It causes health problems due to air contaminants, and contributes to global warming. The inclusion of firewood makes it harder to achieve the target of doubling renewable energy uptake, as firewood consumption would decrease as economies grow.

Another issue is whether or not to include large-scale hydropower. Some suggest that medium- to small-scale hydropower plants that have low environmental impact should be promoted over large-scale hydropower plants. The latter is criticized in many developed countries as it can lead to extensive environmental damage and uptake is likely to be limited in the future. On the other hand, developing regions with large development potential mostly consider that large-scale hydropower should be included in the definition of 'renewable energy'. Even if the officials regard large-scale hydropower and medium- to small-scale hydropower as distinct categories of renewable energy, practical issues remain, including defining the parameters of the large-, and medium- to small-scale hydropower and how to collect data based on categories.

The Asia Pacific Energy Research Centre is currently formulating the APEC Energy Demand and Supply Outlook 6th Edition, which includes the renewable energy supply projections. The Outlook will examine the extent to which the share of renewable energy will grow and whether it would double if the policies of member countries and regions remain as they are at present, considering the differences in definitions of renewable energy depending on what types of renewable energy are included. The Outlook will also need to analyze possible policy options, in case the projection shows that the goal is not likely to be achieved.

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