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G20 Research Group  
at Trinity College at the Munk School of Global Affairs  
in the University of Toronto  
presents the

## **2016 G20 Hangzhou Summit Interim Compliance Report**

6 September 2016 to 17 February 2017

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“The University of Toronto ... produced a detailed analysis to the extent of which each G20 country has met its commitments since the last summit ... I think this is important; we come to these summits, we make these commitments, we say we are going to do these things and it is important that there is an organisation that checks up on who has done what.”

— *David Cameron, Prime Minister, United Kingdom, at the 2012 Los Cabos Summit*

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## 16. Energy: Energy Efficiency

“We encourage members to significantly improve energy efficiency based on the specific needs and national circumstances of each member”

*G20 Leaders' Communiqué: Hangzhou Summit*

### Assessment

	No Compliance	Work in Progress	Full Compliance
Argentina		0	
Australia			+1
Brazil		0	
Canada			+1
China		0	
France			+1
Germany			+1
India	-1		
Indonesia		0	
Italy	-1		
Japan			+1
Korea			+1
Mexico			+1
Russia		0	
Saudi Arabia		0	
South Africa		0	
Turkey	-1		
United Kingdom		0	
United States		0	
European Union		0	
Average Score		+0.20	

### Background

The G20 leaders made their first commitment to develop energy efficiency and clean energy technologies at the 2009 London Summit. At the 2009 Pittsburgh Summit, the G20 leaders reiterated their commitment to stimulate investment in clean energy, renewables and energy efficiency, as well as to provide financial and technical support for such projects in developing countries. This commitment was reinforced at the 2010 Seoul Summit. At the 2011 Cannes Summit, leaders developed the commitment further by referencing the United Nations Secretary General's Sustainable Energy for All initiative.<sup>2270</sup> At the 2013 St. Petersburg Summit, the leaders once again reaffirmed their commitment to cleaner and more efficient technologies, but also highlighted the importance of enhancing the efficiency of markets and shifting towards a more sustainable energy future.

At the 2014 Brisbane Summit the G20 regarded improving energy efficiency as “a cost-effective way to help address the rising demands of sustainable growth and development, as well as energy access and security.” They adopted an Action Plan for Voluntary Collaboration on Energy Efficiency, including “new work on the efficiency and emissions performance of vehicles, particularly heavy duty vehicles; networked devices; buildings; industrial processes; and electricity generation; as well as work

<sup>2270</sup> Cannes Summit Final Declaration: Building Our Common Future, G20 Information Center (Toronto) 4 November 2011. Access date: 12 January 2017. <http://www.g20.utoronto.ca/2011/2011-cannes-declaration-111104-en.html>.

on financing for energy efficiency.”<sup>2271</sup> At the Hangzhou Summit the G20 Leaders committed to significantly improve energy efficiency based on the specific needs and national circumstances of each G20 member. The G20 adopted the G20 Energy Efficiency Leading Programme.<sup>2272</sup>

### Commitment features

The G20 Energy Efficiency Action Plan (EEAP) adopted in 2014 outlined six key areas of work on energy efficiency that initially formed the backbone for international collaboration on energy efficiency organized by the International Energy Partnership for Energy Efficiency Cooperation (IPEEC) under the G20 mandate. The G20 Energy Efficiency Leading Programme (EELP) added five new key areas: Super-Efficient Appliances Deployment initiative, TOP TENs, District Energy Systems, Energy Efficiency Knowledge Sharing Framework, and Energy End-Use-Data and Energy Efficiency Metrics. This expansion stems from interested G20 members’ desire to scale up improvements in energy efficiency.

The key areas for cooperation are the following:<sup>2273</sup>

1. Vehicles
2. Networked Devices
3. Finance
4. Buildings
5. Industrial Processes (Industrial Energy Management)
6. Electricity Generation (High-Efficiency Low Emissions – HELE)
7. Super-Efficient Equipment and Appliance Deployment initiative (SEAD)
8. Sharing Best Available Technologies (BATs) and Best Practices
9. District Energy Systems (DES)
10. Energy Efficiency Knowledge Sharing Framework
11. Energy End-Use-Data and Energy Efficiency Metrics

To achieve full compliance with this commitment the G20 member must take actions in at least 7 key areas.

### Scoring Guidelines

-1	Member does not take actions to improve energy efficiency in any key areas of the G20 Energy Efficiency Leading Programme
0	Member takes actions to improve energy efficiency in more than three but less than seven key areas of the G20 Energy Efficiency Leading Programme
+1	Member takes actions to improve energy efficiency in seven or more key areas of the G20 Energy Efficiency Leading Programme

### Argentina: 0

Argentina has partially complied with the commitment on energy efficiency.

On 15 September 2016, it was announced that Siemens would work with Argentina on infrastructure projects worth 5 billion euros USD5.6 billion. Plans for the next four to five years include the creation of highly efficient gas-fired power plants and wind power projects; automation of

<sup>2271</sup>G20 Leaders' Communiqué Brisbane, G20 Information Center (Toronto) 16 November 2014. Access date: 12 January 2017. <http://www.g20.utoronto.ca/2014/2014-1116-communication.html>.

<sup>2272</sup>G20 Energy Efficiency Leading Programme, European Commission. Access date: 12 January 2017. <https://ec.europa.eu/energy/sites/ener/files/documents/G20%20Energy%20Efficiency%20Leading%20Programme.pdf>.

<sup>2273</sup>G20 Energy Efficiency Leading Programme, European Commission. Access date: 12 January 2017. <https://ec.europa.eu/energy/sites/ener/files/documents/G20%20Energy%20Efficiency%20Leading%20Programme.pdf>.

rail transport systems to improve traffic flow; and works to make the municipal buildings of the city of Buenos Aires more energy efficient.<sup>2274</sup> Key areas 4 and 5: Buildings, Industrial Processes (Industrial Energy Management).

On 16 December 2016, the 1st National Day of Energy Efficiency that took place in Argentina. During the closing ceremony, Minister of Energy and Mining Aranguren stressed that "in the past energy efficiency was provided by individual efforts" and stressed that now it is a collective task and it "can be achieved through education and raise of awareness about energy saving among young people".<sup>2275</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 26 December 2016, through a note addressed to Ministries under the National Executive Branch, the Under Secretary for Energy Saving and Efficiency of the Ministry of Energy and Mining requested active collaboration in the rational and efficient use of energy in 2,312 public buildings.<sup>2276</sup> Key area 4: Buildings

On 05 January 2017, a decree between the Ministry of Energy and Mining and the Ministry of Transport of the Nation was signed to provide the collaboration of all agencies so that companies in the transport sector could conform with the guidelines suggested for the responsible and efficient energy use.<sup>2277</sup> Key area 1: Vehicles

Argentina has made efforts aimed at improving energy efficiency at four key areas. Thus, Argentina receives a score of 0.

*Analyst: Irina Popova*

#### **Australia: +1**

Australia has fully complied with the commitment on energy efficiency.

According to the Energy Efficiency Exchange related to the Department of Environment and Energy, the 2017 Energy Management Leadership Awards is expected to raise international awareness of the benefits of energy management and accelerate the uptake of clean energy technologies and practices.<sup>2278</sup> Key areas 5 and 8: Industrial Processes (Industrial Energy Management), ng Best Available Technologies (BATs) and Best Practices.

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<sup>2274</sup> Siemens vai investir em projetos de infraestrutura na Argentina, UOL 15 September 2016. Access date: 16 January 2017. <http://economia.uol.com.br/noticias/bloomberg/2016/09/15/siemens-vai-investir-em-projetos-de-infraestrutura-na-argentina.htm>.

<sup>2275</sup> Aranguren y Bergman cerraron la 1ra Jornada Nacional de Eficiencia Energética, Argentinian Ministry of energy and Mining 16 December 2016. Access date: 16 January 2017. <https://www.minem.gob.ar/prensa/25891/aranguren-y-bergman-cerraron-la-1ra-jornada-nacional-de-eficiencia-energetica.html>.

<sup>2276</sup> Los edificios públicos se suman al uso responsable y eficiente de la energía, Argentinian Ministry of energy and Mining 26 december 2016. Access date: 16 January 2017. <https://www.minem.gob.ar/prensa/25903/los-edificios-publicos-se-suman-al-uso-responsable-y-eficiente-de-la-energia.html>.

<sup>2277</sup> El Transporte Público se suma a la campaña de ahorro energético, Argentinian Ministry of energy and Mining 5 January 2017. Access date: 16 January 2017. <https://www.minem.gob.ar/prensa/25916/el-transporte-publico-se-suma-a-la-campana-de-ahorro-energetico.html>.

<sup>2278</sup> 2017 Energy Management Leadership Awards, Energy Efficiency Exchange. Access date: 28 December 2016. <https://www.eex.gov.au/news/12/2016/2017-energy-management-leadership-awards-now-accepting-entries>.

The Clean Energy Finance Corporation (CEFC) provides a range of financing options to help small businesses better manage their energy costs, while reducing their carbon emissions, which is proved by CEFC factsheet.<sup>2279</sup> Key area 5: Industrial Processes (Industrial Energy Management).

On 8 September 2016, the 12 projects have been chosen as part of the Australian Renewable Energy Agency's (ARENA) multi-million dollar large-scale solar round. They are expected to unlock almost USD1 billion of commercial investment and boost regional Australian economies.<sup>2280</sup> Key area 6: Electricity Generation (High-Efficiency Low Emissions – HELE)

On 6 October 2016, an Australian state investment organization Clean Energy Finance Corporation (CEFC) and Commonwealth Bank have launched a new USD100 million Energy Efficient Equipment Finance program to provide lower cost finance for energy efficient assets.<sup>2281</sup> Key area 3: Finance

On 10 November 2016, Australia ratified the Paris Agreement and the Doha Amendment to the Kyoto Protocol. According to the report, "The Australian Government's action on climate change" by the Department of the Environment and Energy issued on 15 November 2016, "The National Energy Productivity Plan will reduce the amount of energy used for every dollar of economic activity by 40 per cent between 2015 and 2030. The Plan includes measures to make energy choices easier, drive innovation and more effective modern markets and improve the efficiency of appliances, equipment, buildings and transport."<sup>2282</sup> Key area 1: Vehicles

On 11 November 2016, a state organization the Australian Building Codes Board (ABCB) uploaded on its official website a handbook on improving buildings' energy efficiency.<sup>2283</sup> On the same date a registration for the ABCB's 2017 NCC Information Seminars was opened.<sup>2284</sup> Key area 4: Buildings

On 16 November 2016, the International Energy Agency (IEA) held its 18th Energy Efficient End-use Equipment (4E) meetings in Ottawa, Canada. As the Chair of the IEA 4E, Australia's GEMS Regulator, Michelle Croker, led the meetings.<sup>2285</sup> Key area 7: Super-Efficient Equipment and Appliance Deployment initiative (SEAD)

On 29 November 2016, the official site of an Energy Rating organization, a joint initiative of Australian, State and Territory and New Zealand Governments, informed that Equipment Energy Efficiency (E3) Program was considering the introduction of regulations in Australia to reduce the

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<sup>2279</sup> CEFC helps small businesses cut energy bills and boost performance, Clean Energy Finance Corporation. Access date: 28 December 2016. [http://www.cleanenergyfinancecorp.com.au/media/107419/cefc-factsheet\\_smallbusiness\\_lr.pdf](http://www.cleanenergyfinancecorp.com.au/media/107419/cefc-factsheet_smallbusiness_lr.pdf).

<sup>2280</sup> ARENA backs 12 new large-scale solar plants, EcoGeneration. Access date: 28 December 2016. <https://www.ecogeneration.com.au/arena-backs-12-new-large-scale-solar-plants/>.

<sup>2281</sup> The Clean Energy Finance Corporation (CEFC) and Commonwealth Bank have launched a new USD 100 million Energy Efficient Equipment Finance program to provide lower cost finance for energy efficient assets, Commonwealth Bank of Australia. Access date: 28 December 2016. <https://www.commbank.com.au/guidance/newsroom/CEFC-and-CBA-commit-100m-201610.html>.

<sup>2282</sup> The Australian Government's action on climate change, Department of the Environment and Energy. Access date: 28 December 2016. <https://www.environment.gov.au/system/files/resources/f29a8ccb-77ca-4be1-937d-78985e53ac63/files/factsheet-australian-government-action.pdf>.

<sup>2283</sup> New Handbooks available!, ABCB. Access date: 28 December 2016. <http://www.abcb.gov.au/News/2016/11/04/New-Handbooks-available>.

<sup>2284</sup> Registration is now open, ABCB. Access date: 28 December 2016. <http://www.abcb.gov.au/News/2016/11/07/Registration-is-now-open>.

<sup>2285</sup> International Meeting on Equipment Energy Efficiency, Energy Rating. Access date: 28 December 2016. <http://www.energyrating.gov.au/news/international-meeting-equipment-energy-efficiency>.

energy consumption of pumps used in residential pools and spas (“pool pumps”).<sup>2286</sup> Key area 7: Super-Efficient Equipment and Appliance Deployment initiative (SEAD)

On 2 December 2016, the first funding agreement in the Australian’s Renewable Energy Agency’s (ARENA’s) program to drive down the cost and accelerate the rollout of big solar was signed. The new agreement commits up to USD8.9 million of ARENA funding towards Genex’s USD126 million Kidston Solar Project in North Queensland.<sup>2287</sup> Key area 6: Electricity Generation (High-Efficiency Low Emissions – HELE)

Australia has made efforts aimed at improving energy efficiency at seven key areas. Thus, Australia receives a score of +1.

*Analyst: Ildar Khalilyulin*

### **Brazil: 0**

Brazil has partially complied with the commitment on energy efficiency.

On 11 November 2016, during the 22nd Conference of the Parties to the United Nations Framework Convention on Climate Change (COP22) it was reported that Brazil is the most advanced in reducing greenhouse gas emissions from deforestation, a financial incentive instrument for developing countries that obtain results from combating forest degradation and other actions in this area. Besides being a pioneer, Brazil will be an example in cutting forest emissions for the international community.<sup>2288</sup> Key area 3: Finance

On 17 November 2016, during the 22nd UN Conference of the Parties on Climate Change in Morocco (COP 22) the Brazilian government launched the Biofuturo platform, a mechanism to encourage the use of biofuels in Brazil and in the international market. The platform aims to attract the attention of the world to the development of second generation biofuels produced in Brazil. The initiative intends for promoting the reduction of emissions in the transport area and opens space for a totally new, low-carbon bio-economy, as it offers alternatives to fossil-based material.<sup>2289</sup> Key area 1: Vehicles

USD70,000 per year. The installed system symbolizes the commitment of the Brazilian government to the use of renewable energy sources, in addition to the water source. The project is the result of a Technical Cooperation Agreement between the MME and the Brazilian Solar Photovoltaic Energy Association for the installation of the first system of the Esplanade of the Ministries in Brasília, connected to the distribution network.<sup>2290</sup> Key area 4: Buildings

On 18 November 2016, the incentive to use mineral coal for electricity generation was vetoed. The article was approved by the Federal Senate a month ago. The veto was recommended by the

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<sup>2286</sup> Consultation: Pool Pumps, Energy Rating. Access date: 28 December 2016.

<http://www.energyrating.gov.au/news/consultation-pool-pumps>.

<sup>2287</sup> Australia Invests in Both Big Solar and Big Coal, Environment News Service. Access date: 28 December 2016.

<http://ens-newswire.com/2016/12/04/australia-invests-in-both-big-solar-and-big-coal/>.

<sup>2288</sup> Estratégia brasileira para reduzir emissões florestais é considerada modelo, Portal Brasil 11 November 2016. Access date: 28 December 2016. <http://www.brasil.gov.br/meio-ambiente/2016/11/estrategia-brasileira-para-reduzir-emissoes-florestais-e-considerada-modelo>.

<sup>2289</sup> Brasil lança plataforma para estimular mercado de biocombustíveis, Portal Brasil 17 November 2016. Access date: 28 December 2016. <http://www.brasil.gov.br/meio-ambiente/2016/11/brasil-lanca-plataforma-para-estimular-mercado-de-biocombustiveis>.

<sup>2290</sup> Minas e Energia inaugura 1ª usina solar em prédio do governo federal da Esplanada dos Ministérios, Portal Brasil 17 November 2016. Access date: 28 December 2016. <http://www.brasil.gov.br/meio-ambiente/2016/11/minas-e-energia-inaugura-1-usina-solar-em-predio-do-governo-federal-da-esplanada-dos-ministerios>.

Environment Minister, Sarney Filho, in an open letter to the President of the Republic on October 20 2016. Among the justifications for the veto was the fact that coal is a non-renewable, highly polluting, expensive and responsible source of one-third of the world's greenhouse gas emissions as well as stimulation the energy matrix that goes against international agreements (the Paris Agreement) which was signed by the country.<sup>2291</sup> Key area 6: Electricity Generation (High-Efficiency Low Emissions – HELE)

Brazil has taken actions to improve energy efficiency in four key areas of the G20 Energy Efficiency Leading Programme. Thus, Brazil receives a score of 0.

*Analyst: Sofia Streltsova*

### **Canada: +1**

Canada has fully complied with the commitment on energy efficiency.

The Energy Efficiency for Industry program in Canada offers cost-shared assistance to industrial companies in implementing energy management projects. Currently the submission for financing is open for the projects that can be completed by 31 March 2017.<sup>2292</sup> Key area 5: Industrial Processes (Industrial Energy Management)

On 15 October 2016, first energy star day was held in Canada. The goal of this event was to “raise Canadians’ level of understanding and awareness of ENERGY STAR Canada and its instrumental role in helping Canadians be energy efficient.”<sup>2293</sup> Key areas 8 and 10: Sharing Best Available Technologies (BATs) and Best Practices, Energy Efficiency Knowledge Sharing Framework

On 18 October 2016, Canadian Parliamentary Secretary to Minister of Natural Resources Kim Rudd, together with the US Department of energy launched a “new clean heat and power demonstration project.” This project generates power from biomass or fossil fuels.<sup>2294</sup> Key area 6: Electricity Generation (High-Efficiency Low Emissions – HELE)

On 2 November 2016, President of the Treasury Board Scott Brison announced government plans to reduce its greenhouse gas emissions by 40 per cent by 2030. The goal is planned to be reached through “strategic investments in infrastructure and vehicle fleets, green procurement, and support for clean technology.”<sup>2295</sup> Key areas 1 and 3: Vehicles, Finance.

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<sup>2291</sup> Temer veta carvão mineral para geração de energia elétrica, Portal Brasil 18 November 2016. Access date: 28 December 2016. <http://www.brasil.gov.br/meio-ambiente/2016/11/temer-veta-carvao-mineral-para-geracao-de-energia-eletrica>.

<sup>2292</sup> Energy Efficiency for Industry Financial Assistance, Natural Resources Canada. Access date: 12 January 2017. <http://www.nrcan.gc.ca/energy/efficiency/industry/financial-assistance/5387>.

<sup>2293</sup> ENERGY STAR® Canada celebrated our first ENERGY STAR day on October 25, 2016, National Resources Canada. Access date: 12 January 2017. [https://www.nrcan.gc.ca/energy/products/energystar\\_day/19092](https://www.nrcan.gc.ca/energy/products/energystar_day/19092).

<sup>2294</sup> Canada and United States Launch Joint Clean Heat and Power Project at CanmetENERGY Ottawa, Government of Canada 18 October 2016. Access date: 12 January 2017. <http://news.gc.ca/web/article-en.do?mthd=advSrch&crtr.page=3&crtr.dpt1D=6683&nid=1139619>.

<sup>2295</sup> Federal Government to significantly reduce its own greenhouse gas emissions, Government of Canada 2 November 2016. Access date: 12 January 2017. <http://news.gc.ca/web/article-en.do?mthd=tp&crtr.page=1&nid=1146639&crtr.tp1D=1>.

On 3 November 2016, the Government of Canada announced additional loan guarantee support for the Lower Churchill projects in Newfoundland and Labrador. These projects aim at greenhouse gas emissions reduction in the provinces of Canada.<sup>2296</sup> Key area 3: Finance

On 14-15 and 16-17 November Natural Resources Canada's local energy efficiency partnership (LEEP) Technology 2-day Forum was held. The forum's goal is to provide a time saving way for the industry to know about new technologies for high performance homes.<sup>2297</sup> Key areas 4 and 10: Buildings, Energy Efficiency Knowledge Sharing Framework

On 15 November 2016, Canada hosted and participated in G20 Energy Efficiency Leading Program (EELP) Product Best Practice Policy Exchange Forum. The policy exchange provided chance for participants to discuss the newest developments in energy efficiency product policy from a range of countries.<sup>2298</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 29 November 2016, Government of Canada announced support for innovations in the forest sector to boost the design of more renewable materials in the production of a range of consumer items. This support is provided under the commitment to "address climate change, create new opportunities and markets for Canadian forest companies and sustain good middle-class jobs for Canadians."<sup>2299</sup> Key area 5: Industrial Processes (Industrial Energy Management)

On 5 December 2016, Canadian Minister of Natural Resources Jim Carr spoke about low-carbon transportation initiatives that aim to introduce cleaner fuels and vehicles. Minister Carr also announced that the government is planning to support AddÉnergie install fast-charging stations for electric vehicles at 25 Canadian Tire locations throughout Ontario by providing almost half of the total USD1.8-million investment for the stations.<sup>2300</sup> Key area 1: Vehicles

Canada has taken actions to improve energy efficiency in seven key areas of the G20 Energy Efficiency Leading Programme. Thus, Canada receives a score of +1.

*Analyst: Irina Popova*

## **China: 0**

China has partially complied with the commitment on energy efficiency.

On 12 October 2016, Deputy Group Leader of the China Energy Group at Lawrence Berkeley National Laboratory (LBNL), Nan Zhou, participated in the foundation laying ceremony for the Sino-US Low Carbon Building and Community Innovation Experimental Center, which is the office building for the LBNL-Shenzhen IBR Joint Research Center, in Longgang District, Shenzhen city. It is a new exploration after the establishment of Shenzhen IBR office building in 2009. The Center is an experiment on net zero energy building, which will explore technology innovation in carbon

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<sup>2296</sup> Government of Canada Announces Additional Loan Guarantee Support for Lower Churchill Projects, Government of Canada 3 November 2016. Access date: 12 January 2017. <http://news.gc.ca/web/article-en.do?mthd=advSrch&crtr.page=2&crtr.dpt1D=6683&nid=1147219>.

<sup>2297</sup> Upcoming LEEP Home Builder Events, Natural Resources Canada. Access date: 12 January 2017. <http://www.nrcan.gc.ca/energy/efficiency/housing/leep/19095>.

<sup>2298</sup> G20 EELP Product Best Practice Policy Exchange Forum - Ottawa, Canada, energy Efficient End-use Equipment 15 November 2016. Access date: 12 January 2017. <http://www.iea-4e.org/events-and-meetings/2016/g20-eelp-forum>.

<sup>2299</sup> Governments of Canada and Quebec Support Innovative Forest Sector Project That Will Lower Costs and Green the Production of Consumer Products, Government of Canada 29 November 2016. Access date: 12 January 2017. <http://news.gc.ca/web/article-en.do?mthd=advSrch&crtr.page=1&crtr.dpt1D=6683&nid=1161989>.

<sup>2300</sup> Government of Canada Invests in Low-Carbon Transportation, Government of Canada 5 December 2016. . Access date: 12 January 2017. <http://news.gc.ca/web/article-en.do?mthd=advSrch&crtr.page=1&crtr.dpt1D=6683&nid=1165339>.

emissions control, environmental quality improvement and building fabrication, and will become a model for low-carbon lifestyle and green community system.<sup>2301</sup> Key area 4: Buildings

On 30 October 2016, German State Secretary Rainer Baake took part in the International Forum on Energy Transitions in Suzhou, China. During the conference, State Secretary Baake held bilateral talks with Chinese industry and government representatives. The topics ranged from grid expansion to power plant flexibilisation, storage technologies and renewable energy.<sup>2302</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 26 November 2016 Shanghai Petroleum and Natural Gas Exchange (SHPGX), a national energy trading center, officially opened. Chairman of the National Development and Reform Commission, Xu Shaoshi, said that the platform is both an important achievement of China's market reform of oil and gas prices, and strong support for further reforms.<sup>2303</sup> "Promoting the improvement and upgrading of the energy structure. By 2020 the energy consumption per unit of GDP shall drop by 15 percent."<sup>2304</sup> Key area 5: Industrial Processes (Industrial Energy Management)

On 16 November, 2016 a national guideline on environmental improvements was approved by the State Council. China will improve environmental protection and restoration to ensure a greener, more sustainable development, according to the new guideline for environmental protection during the 13th Five-Year Plan period (2016-2020). "We are committed to a development path that delivers economic progress and environmental improvement," Premier Li said.<sup>2305</sup> Key area 11: Energy End-Use-Data and Energy Efficiency Metrics

China has taken actions in four key areas of the G20 Energy Efficiency Leading Program. Thus, China receives a score of 0.

*Analyst: Kirill Krivosheyev*

#### **France: +1**

France has not complied with the commitment on energy efficiency.

In 2014, Energy Efficiency Plan for France was adopted. This plan sets targets and describes policies in major areas: transport, buildings, industry, agriculture, funding for high-performance equipment, heating and cooling efficiency and others. This plan is to be executed until 2020.<sup>2306</sup> This programme contains actions on several key areas of G20 Energy Efficiency Leading Programme: key area 1: vehicles, key area 3: finance, key area 4: buildings, key area 5: industrial processes (Industrial Energy Management), key area 7: super-efficient equipment and appliance deployment initiative (SEAD).

On 29 September 2016, Federal Minister of Transport Alexander Dobrindt and his French colleague, Alain Vidalies, launched the "German-French Initiative for Electromobility and Digitality"

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<sup>2301</sup> Dr. Nan Zhou gave a speech at the Foundation Laying Ceremony for LBNL-Shenzhen IBR Joint Research Center, China Energy Group 26 October 2016. Access date: 08 January 2017. <https://china.lbl.gov/news/dr-nan-zhou-gave-speech-foundation-laying>.

<sup>2302</sup> Baake at Energy Transition Conference in China, Federal Ministry for Economic Affairs and Energy 30 October 2016. Access date: 25 December 2015. <http://www.bmwi.de/EN/Press/press-releases,did=788088.html>.

<sup>2303</sup> China Focus: SHPGX launched to lead China's market reform of energy, Xinhua News Agency 26 November 2016. Access date: 08 January 2017. [http://news.xinhuanet.com/english/2016-11/26/c\\_135860627.htm](http://news.xinhuanet.com/english/2016-11/26/c_135860627.htm).

<sup>2304</sup> National Human Rights Action Plan of China (2016-2020), Xinhua News Agency 29 September 2016. Access date: 08 January 2017. [http://news.xinhuanet.com/english/2016-09/29/c\\_135722183\\_5.htm](http://news.xinhuanet.com/english/2016-09/29/c_135722183_5.htm).

<sup>2305</sup> China approves new guideline on environmental improvements, Xinhua News Agency 16 November 2016. Access date: 08 January 2017 [http://news.xinhuanet.com/english/2016-11/16/c\\_135835078.htm](http://news.xinhuanet.com/english/2016-11/16/c_135835078.htm).

<sup>2306</sup> Energy efficiency action plan for France – 2014, European Commission. Access date: 17 January 2017. [https://ec.europa.eu/energy/sites/ener/files/documents/2014\\_neeap\\_en\\_france.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/2014_neeap_en_france.pdf)

in Munich. The aim of the initiative is to strengthen the cooperation between the two countries in order to promote innovations in the fields of e-mobility and automated driving.<sup>2307</sup>

France and Mexico are leading members of the Energy Efficiency Finance Task Group (EEFTG). On 13 October 2016, the EEFTG published their 2016 Activity Report. The report highlights key achievements in the areas of engagement, policy and finance. The report shows progress was made in several of the key areas identified in the commitment features including on energy efficiency, knowledge sharing, sharing best available technologies and practices, and finance.<sup>2308</sup>

On 28 December 2016, France submitted its long-term strategy in accordance with article 4 of the Paris Agreement to combat climate change. The strategy includes targets on several of the key action areas as outlined in the commitment features, including on energy efficiency for vehicles, reducing energy consumption and improving energy efficiency in buildings, catalyzing energy consumption management, cutting industry greenhouse gas emissions, and reduce production related energy emissions.<sup>2309</sup>

On 3 January 2017, Minister of the Environment, Energy and Marine Affairs Ségolène Royal and Minister of the Economy and Finance Michel Sapin announced the launch of the process for issuing France's first sovereign green bond. The action is intended to spearhead the country's actions to protect the environment, in line with the 2015 Paris Agreement on the climate and the 2015 Act on the Energy Transition for Green Growth. The official government website specifies three major objectives to be achieved in this regard: Foster the development of the green bonds market, define the best framework for this market, ensure the Paris marketplace's lead in terms of green finance.<sup>2310</sup> This action corresponds to the key area 3 "Finance" of the G20 Energy Efficiency Leading Programme. On 24 January 2017, the first French sovereign green bond was issued in the amount of EUR7 billion with a maturity of 22 years. According to Agence France Trésor, the Green OAT 1.75% is the largest and longest-dated benchmark green bond ever issued.<sup>2311</sup>

France has acted to improve energy efficiency in most key areas of the G20 Energy Efficiency Leading Programme. Thus, France receives a score of +1.

*Analysts: Mark Rakhmangulov & Anastasiya Polovko*

### **Germany: +1**

Germany has fully complied with the commitment on energy efficiency.

On 29 September 2016, Federal Minister of Transport Alexander Dobrindt and his French colleague, Alain Vidalies, launched the "German-French Initiative for Electromobility and Digitality" in Munich. The aim of the initiative is to strengthen the cooperation between the two countries in

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<sup>2307</sup> Deutsch-Französische Initiative Elektromobilität und Digitalität gestartet, Federal Ministry of Transport and Digital Infrastructure 29 September 2016. Access date: 25 December 2016.

<http://www.bmvi.de/SharedDocs/DE/Pressemitteilungen/2016/156-dobrindt-deutsch-franzoesische-erklarung.html>.

<sup>2308</sup> Energy Efficiency Finance Task Group (EEFTG), International Partnership for Energy Efficiency Cooperation. Date of Access: 03 April 2017. <https://ipeec.org/cms/21-energy-efficiency-finance-task-group-eeftg-.html>

<sup>2309</sup> Communication of long-term strategies, UN Framework Convention on Climate Change. Date of Access: 03 April 2017. [http://unfccc.int/focus/long-term\\_strategies/items/9971.php](http://unfccc.int/focus/long-term_strategies/items/9971.php)

<sup>2310</sup> Launch of the process for issuing the first sovereign green bond, French Government 5 January 2017. Access date: 17 January 2017. <http://www.gouvernement.fr/en/launch-of-the-process-for-issuing-the-first-sovereign-green-bond>.

<sup>2311</sup> Launch of the green OAT 1.75% 25 June 2039, 24 January 2017, Agence France Trésor. Date of Access: 03 April 2017. [http://www.aft.gouv.fr/articles/launch-of-the-green-oat-1-75-25-june-2039\\_12866\\_ing2.html](http://www.aft.gouv.fr/articles/launch-of-the-green-oat-1-75-25-june-2039_12866_ing2.html)

order to promote innovations in the fields of e-mobility and automated driving.<sup>2312</sup> Key area 1: Vehicles

On 29 September 2016, the seventh session of the Indo-German Energy Forum took place. India is going to increase its power generation capacities by 100GW (photovoltaics), 60GW (wind) and 15GW (biomass) by 2022. To do this, India cooperate with Germany, also with its private sector, on the issues of renewable energy and grid stability.<sup>2313</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 7 October 2016, Federal Minister for Economic Affairs and Energy, Sigmar Gabriel, and Jordan's Minister of Foreign Affairs, Nasser Judeh, signed the Joint Declaration to confirm their intent to establish an energy dialogue between Germany and Jordan. The Energy Export Initiative of the Federal Ministry for Economic Affairs and Energy is aimed at intensifying the cooperation between German small and medium-sized enterprises offering climate-friendly technologies and Jordanian energy companies.<sup>2314</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

On 19 October 2016, the Federal Cabinet adopted the law on the redistribution of responsibility for nuclear waste management, which is devoted to the financial monitoring of the use of nuclear energy.<sup>2315</sup> Key area 3: Finance

On 24 October 2016, the European Commission approved German's funding scheme for cogeneration plants set out in the new Combined Heat and Power Act.<sup>2316</sup> Key area 3: Finance

On 30 October 2016, German State Secretary Rainer Baake took part in the International Forum on Energy Transitions in Suzhou, China. During the conference, State Secretary Baake held bilateral talks with Chinese industry and government representatives. The topics ranged from grid expansion to power plant flexibilisation, storage technologies and renewable energy.<sup>2317</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 31 October 2016, the Federal Office of Economics and Export Control (BAFA) established the subsidy funds for investments in cogeneration. This is possible after the European Commission has approved the cogeneration legislation.<sup>2318</sup> Key area 3: Finance

On 9 November 2016, the Federal Cabinet adopted the National Strategic Measures for Alternative Fuels Infrastructure, presented by the Federal Minister of Transport and Digital Infrastructure,

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<sup>2312</sup> Deutsch-Französische Initiative Elektromobilität und Digitalität gestartet, Federal Ministry of Transport and Digital Infrastructure 29 September 2016. Access date: 25 December 2016. <http://www.bmvi.de/SharedDocs/DE/Pressemitteilungen/2016/156-dobrindt-deutsch-franzoesische-erklaerung.html>.

<sup>2313</sup> Germany and India aiming to deepen cooperation on energy, Federal Ministry for Economic Affairs and Energy 29 September 2016. Access date: 25 December 2015. <http://www.bmwi.de/EN/Press/press-releases,did=785450.html>.

<sup>2314</sup> Minister Gabriel: Germany helps Jordan restructure its energy sector, Federal Ministry for Economic Affairs and Energy 7 October 2016. Access date: 25 December 2016. <http://www.bmwi.de/EN/Press/press-releases,did=785504.html>.

<sup>2315</sup> Cabinet approves important energy legislation, Federal Ministry of Transport and Digital Infrastructure 19 October 2016. Access date: 25 December 2016. <http://www.bmwi.de/EN/Press/press-releases,did=788370.html>.

<sup>2316</sup> Minister Gabriel: Green light from Brussels for CHP funding and interruptible loads, Federal Ministry of Transport and Digital Infrastructure 24 October 2016. Access date: 25 December 2016. <http://www.bmwi.de/EN/Press/press-releases,did=788958.html>.

<sup>2317</sup> Baake at Energy Transition Conference in China, Federal Ministry for Economic Affairs and Energy 30 October 2016. Access date: 25 December 2015. <http://www.bmwi.de/EN/Press/press-releases,did=788088.html>.

<sup>2318</sup> BAFA versendet Förderbescheide über mehr als eine Milliarde Euro für Investitionen in Kraft-Wärme-Kopplung, Federal Ministry of Transport and Digital Infrastructure 31 October 2016. Access date: 25 December 2016. <http://www.bmwi.de/DE/Presse/pressemitteilungen,did=787648.html>.

Alexander Dobrindt. The aim of this project is the acceleration of alternative drives.<sup>2319</sup> Key area 1: Vehicles

On 14 November 2016, the Federal Cabinet adopted the climate protection plan 2050. The plan contains climate indicators for individual industries and thus provides a concrete orientation for strategic decisions in the coming years.<sup>2320</sup> Key area 11: Energy End-Use-Data and Energy Efficiency Metrics

On 16-18 November 2016, Rainer Baake, State Secretary in the Federal Ministry for Economic Affairs and Energy, visited the 22nd United Nations (UN) climate conference. He met with high-level energy policy-makers to discuss strategies of decarbonizing the energy sector in order to attain the climate targets agreed in Paris. State Secretary Baake used his visit to talk with representatives of the Moroccan energy sector about their energy transition targets, and to head the meeting of the steering committee for the German-Moroccan energy partnership.<sup>2321</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

On 25 November 2016, Roland Berger consulting company reported on the results of the investigation supported by the Federal Environment Ministry. This report assumed the opportunities offered by digitalization to industry, for example, significant CO2 savings potential.<sup>2322</sup> Key area 5: Industrial Processes (Industrial Energy Management)

On 5 December 2016, young German companies and start-ups got opportunity to apply with their ideas for the German Energy Agency. The goal of the project is to establish an international sustainability network.<sup>2323</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

On 12 December 2016, the Federal Network Agency invited tenders for solar energy equipment according to the Renewable Energy Act 2017. The tender relates to facilities with an installed capacity of more than 750 kilowatts.<sup>2324</sup> Key area 6: Electricity Generation (High-Efficiency Low Emissions – HELE)

Germany has taken actions in eight key areas of the G20 Energy Efficiency Leading Program. Thus, Germany receives a score of +1.

*Analyst: Elizaveta Nekrasova*

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<sup>2319</sup> Nationaler Strategierahmen für den Ausbau der Infrastruktur für alternative Kraftstoffe, Federal Ministry of Transport and Digital Infrastructure 9 November 2016. Access date: 25 December 2016

<http://www.bmvi.de/SharedDocs/DE/Pressemitteilungen/2016/173-dobrindt-kabinett-nsr.html>.

<sup>2320</sup> Klimaschutzplan 2050: Kabinett beschließt Wegweiser in ein klimaneutrales Deutschland, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety 14 November 2016. Access date: 25 December 2016.

[http://www.bmub.bund.de/presse/pressemitteilungen/pm/artikel/klimaschutzplan-2050-kabinett-beschliesst-wegweiser-in-ein-klimaneutrales-deutschland/?tx\\_ttnews%5BbackPid%5D=103&cHash=09a7e727646fa0161e185f7a94146ffd](http://www.bmub.bund.de/presse/pressemitteilungen/pm/artikel/klimaschutzplan-2050-kabinett-beschliesst-wegweiser-in-ein-klimaneutrales-deutschland/?tx_ttnews%5BbackPid%5D=103&cHash=09a7e727646fa0161e185f7a94146ffd)

<sup>2321</sup> State Secretary Rainer Baake calls for global energy transition at the UN climate conference in Marrakesh, Federal Ministry for Economic Affairs and Energy 16 October 2016. Access date: 25 December 2016.

<http://www.bmwi.de/EN/Press/press-releases,did=790298.html>.

<sup>2322</sup> Digitalisierung der GreenTech-Branche lohnt sich, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety 25 November 2016. Access date: 25 December 2016.

[http://www.bmub.bund.de/presse/pressemitteilungen/pm/artikel/digitalisierung-der-greentech-branche-lohnt-sich/?tx\\_ttnews%5BbackPid%5D=103&cHash=b06334eff1df8e9a7a7f2f99e5010220](http://www.bmub.bund.de/presse/pressemitteilungen/pm/artikel/digitalisierung-der-greentech-branche-lohnt-sich/?tx_ttnews%5BbackPid%5D=103&cHash=b06334eff1df8e9a7a7f2f99e5010220).

<sup>2323</sup> Neue Ideen für die Energiewende gesucht, Federal Government 5 December 2016. Access date: 25 December 2016. <https://www.bundesregierung.de/Content/DE/Meldungen/2016/12/2016-12-05-dena-Energiewende-Award.html>.

<sup>2324</sup> Erste Ausschreibung nach neuem EEG, Federal Government 12 December 2016. Access date: 25 December 2016. <https://www.bundesregierung.de/Content/DE/Meldungen/2016/12/2016-12-12-solaranlagen.html>.

**India: -1**

India has not complied with the commitment on energy efficiency.

On 4 October 2016, the Asian Development Bank (ADB) set to provide USD500 million in financing for rooftop solar systems that can help the Indian government expand energy access using renewable energy. ADB provided the financing to Punjab National Bank - one of India's largest commercial banks - which used the ADB funds to make loans to various developers and end users throughout India to install rooftop solar systems. The Government of India aims to increase the amount of energy sourced from solar rooftop systems to 40 gigawatts by 2022. This is part of a wider goal under the Jawaharlal Nehru National Solar Mission to increase its overall solar energy generation to 100 gigawatts by the same date.<sup>2325</sup> Key area 3: Finance

On 4 October 2016, Energy Efficiency Services Limited (EESL) signed a deal with the Ministry of Urban Development to enhance energy conservation and ensure grid reliability. Under the agreement, EESL and the Ministry of Urban Development will supply and deploy the latest energy efficiency technologies at municipal level in cities selected to benefit from the country's Smart Cities Mission - an initiative designed by the Indian government under prime minister Narendra Modi, to deploy smart city technologies to modernize the infrastructure of 100 cities to ensure quality of life in India.<sup>2326</sup> Key area 4: Buildings

India has taken actions to improve energy efficiency only in two key areas of the G20 Energy Efficiency Leading Program. Thus, it receives a score of -1.

*Analyst: Evgeny Tsarik*

**Indonesia: 0**

Indonesia has partially complied with the commitment on energy efficiency.

In December 2016, the Directorate-General of New, Renewable Energy and Energy Conservation (DGNREEC) within the Ministry of Energy and Mineral Resources of Indonesia announced the DGNREEC's priorities for 2017,<sup>2327</sup> which include:

- Construction of 35,000MW additional power capacity, and 25 per cent of it should be based on renewable energy power generation (having connection with the key area "Electricity Generation" of the G20 Energy Efficiency Leading Programme);
- Mandatory implementation of Business 20 (B20) standard in biofuel usage, which started in 2016, in the transportation and power plant sectors (having connection with the key areas "Vehicles," "Electricity Generation" of the G20 Energy Efficiency Leading Programme);
- Enhancement of the development of the new and renewable energy based power plants by releasing feed-in-tariffs (having connection with the key area "Electricity Generation" of the G20 Energy Efficiency Leading Programme);
- Development of rural energy and rural electricity based on renewable energy, particularly through the Bright Indonesia Program (having connection with the key areas "Electricity Generation," "District Energy Systems" of the G20 Energy Efficiency Leading Programme);

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<sup>2325</sup> ADB to Provide India USD 500 Million for Solar Rooftop Systems, Asian Development Bank 04 October 2016. Access date: 16 December 2016. <https://www.adb.org/news/adb-provide-india-500-million-solar-rooftop-systems>.

<sup>2326</sup> India adds energy efficiency to smart cities programme, Metering & Smart energy international 04 October 2016. Access date: 16 December 2016. <https://www.metering.com/news/energy-efficiency-programmes-eesl-india/>.

<sup>2327</sup> Indonesia's energy program is going green, The Worldfolio 6 December 2016. Access date: 12 December 2016. <http://www.theworldfolio.com/interviews/indonesias-energy-program-is-going-green/4262/>.

- Establishment of the energy fund that will be allocated for renewable energy development (having connection with the key area “Finance” of the G20 Energy Efficiency Leading Programme).

Indonesia has taken actions to improve energy efficiency in four key areas of the G20 Energy Efficiency Leading Program. Thus, it receives a score of 0.

*Analyst: Pavel Doronin*

### **Italy: -1**

Italy has not complied with the commitment on energy efficiency.

On 16 September 2016, the Ministry of Economic Development published a Decree that regulates the preparation and implementation measures concerning the improvement of the performance and the energy efficiency of buildings in the central public administration. The Decree includes such particular points as: the mode of financing; the methods and criteria for the identification and selection of interventions eligible for funding; the presentation of the proposed intervention and approval of program interventions; required technical assistance; the coordination, data collection and monitoring that is necessary to verify the state of progress of the program.<sup>2328</sup> Key area 7: Super-Efficient Equipment and Appliance Deployment initiative (SEAD)

On 17 November 2016, the Chief Executive Officer of the Joint-stock company Terna, Matteo Del Fante and CEO and General Manager of the Rete Ferroviaria Italiana (the owner of Italy's railway network, being the infrastructure manager of the FS Italiane Holding and with an active participation of the State providing access to the Italian network) Maurizio Gentile, have signed a Letter of Intent with the aim of collaborating to identify and implement initiatives of common interest in the renewable-energy field in Italy. In particular, the agreement will see the two companies develop a project aimed at constructing photovoltaic plants that will feed RFI's electricity consumption with clean energy.<sup>2329</sup> Key area 6: Electricity Generation (High-Efficiency Low Emissions – HELE)

November 2016 was dedicated to the theme of efficient energy in Italy. Various institutions, trade associations, public administration and schools were encouraged to organize at their offices or in the public squares different events, promotional activities, seminars, concerning a more conscious use of energy in the workplaces, at homes, in schools. The initiative is promoted by the Ministry of Economic Development and implemented by ENEA in the framework of the National Campaign “Italy in A-Class.”<sup>2330</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

Italy has taken actions to improve energy efficiency only in three key areas of G20 Energy Efficiency Leading Program. Thus, it receives a score of -1.

*Analyst: Maria Strelnikova*

### **Japan: +1**

Japan has fully complied with the commitment on energy efficiency.

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<sup>2328</sup> The Ministry of Economic Development published Decree that regulates the preparation and implementation measures concerning the improvement of the performance and the energy efficiency of buildings in the central public administration, Ministry of Economic Development 16 September 2016. Access date: 27 December 2016. <http://www.gazzettaufficiale.it/eli/id/2016/11/09/16A07878/sg>.

<sup>2329</sup> The Joint-stock company Terna and the Rete Ferroviaria Italiana have signed a Letter of Intent with the aim of joint cooperation, FS News 17 November 2016. Access date: 27 December 2016. <http://www.fsnews.it/fsn/Sala-stampa/Comunicati/Terna-e-RFI-insieme-per-energia-sostenibile>.

<sup>2330</sup> November of 2016 was dedicated to the theme of efficient energy in Italy, Italia in Classe–A. Access date: 27 December 2016. <http://www.italiainclassea.enea.it/campagna3.aspx>.

In September 2016 International Energy Agency (IEA) published an updated review of Japan's energy policies.<sup>2331</sup> The report suggests that "Japan continues to be a global leader in energy efficiency." In particular, IEA gives high evaluation of Japan's policies related to 7 key areas of the G20 Energy Efficiency Leading Programme – namely, "Vehicles," "Networked Devices," "Finance," "Buildings," "Industrial Processes," "District Energy Systems," "Energy End-Use-Data and Energy Efficiency Metrics."

On 16 September 2016, Japan published "Energy Conservation Technology Strategy 2016" jointly formulated by the Agency for Natural Resources and Energy (ANRE) and the New Energy and Industrial Technology Development Organization (NEDO).<sup>2332</sup> The strategy aims to effectively promote the research and development of energy conservation technologies. It specifies the fields of focus of the Japanese government in terms of promoting energy efficiency, including energy conversion/supply, home and business and transportation. The strategy was revised from the 2011 version to include broader concepts concerning energy management systems, e.g., Home Energy Management System and Building Energy Management System, bearing in mind the trends in Internet of Things and other new technologies. The paper also aims to advance research and development on energy efficient technologies and popularize its outcomes as an effort for achieving the goal of "realization of an advanced energy-saving society." Key areas: 1 "Vehicles," 4 "Buildings," 5 "Industrial Processes," 8 "Sharing Best Available Technologies and Best Practices," 10 "Energy Efficiency Knowledge Sharing Framework."

On 25 November 2016, it was announced that Japan joined a number of contributing countries donating an investment worth USD23 million to the United Nations Framework Convention on Climate Change (UNFCCC)'s Climate Technology Centre and Network to promote accelerated development and transfer of climate technologies for energy efficient, low carbon and climate resilient development at the request of the developing countries.<sup>2333</sup> "Finance," "Sharing Best Available Technologies and Best Practices," "Energy Efficiency Knowledge Sharing Framework."

Japan has taken actions to improve energy efficiency in all key areas of G20 Energy Efficiency Leading Program. Thus, it receives a score of +1.

*Analyst: Pavel Doronin*

### **Korea: +1**

Korea has fully complied with the commitment on energy efficiency.

Korea has a sound policy framework for energy efficiency with the "Energy Use Rationalization Act"<sup>2334</sup> of 2010 at its core, energy efficiency policies developed by the Ministry of Trade, Industry and Energy<sup>2335</sup> and implemented by the Korea Energy Agency.<sup>2336</sup>

Within this framework in 2016 Korea was implementing sectoral (industry, buildings, transport) energy efficiency programs, programs on market transformation for energy efficiency (labeling and

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<sup>2331</sup> Energy policies of IEA countries. Japan. 2016, International Energy Agency. Access date: 30 November 2016. <https://www.iea.org/publications/freepublications/publication/EnergyPoliciesofIEACountriesJapan2016.pdf>.

<sup>2332</sup> Energy Efficiency Technology Strategy Formulated, Japan's Ministry of Economy, Trade and Industry 16 September 2016. Access date: 29 November 2016. [http://www.meti.go.jp/english/press/2016/0916\\_02.html](http://www.meti.go.jp/english/press/2016/0916_02.html).

<sup>2333</sup> USD 23m for climate technology transfer in developing countries, Energy Live News 25 November 2016. Access date: 27 November 2016. <http://www.energylivenews.com/2016/11/25/23m-for-climate-technology-transfer-in-developing-countries/>.

<sup>2334</sup> Energy Use Rationalization Act, Korea Energy Agency 31 March 2015. Access date: 11 December 2016. [http://www.energy.or.kr/renew\\_eng/resources/information\\_view.aspx?no=6&page=1](http://www.energy.or.kr/renew_eng/resources/information_view.aspx?no=6&page=1).

<sup>2335</sup> Ministry of Trade, Industry and Energy. Access date: 11 December 2016. <http://english.motie.go.kr/>.

<sup>2336</sup> Korea Energy Agency. Access date: 11 December 2016. [http://www.energy.or.kr/renew\\_eng/main/main.aspx](http://www.energy.or.kr/renew_eng/main/main.aspx).

certificates), programs for financial support for energy efficiency, educational and public campaigns for energy efficiency.<sup>2337</sup> These policy measures have connection with 7 key areas of the G20 Energy Efficiency Leading Programme: “Vehicles,” “Networked Devices,” “Finance,” “Buildings,” “Industrial Processes,” “Sharing Best Available Technologies and Best Practices,” “Energy Efficiency Knowledge Sharing Framework.”

On 25 November 2016, it was announced that Korea joined a number of contributing countries donating an investment worth USD23 million to the UNFCCC’s Climate Technology Centre and Network to promote accelerated development and transfer of climate technologies for energy efficient, low carbon and climate resilient development at the request of the developing countries.<sup>2338</sup> This action by the Korean Government has connection with 3 key areas of the G20 Energy Efficiency Leading Programme – namely, “Finance,” “Sharing Best Available Technologies and Best Practices,” “Energy Efficiency Knowledge Sharing Framework.”

On 6 December 2016, it was announced that the government had plans to reduce 37 per cent of greenhouse gas emissions from the current levels by 2030, and specifically – 19,4 per cent in electricity generation and 11,7 per cent in industries.<sup>2339</sup> “Industrial Processes,” “Electricity Generation.” It was also announced that the government had decided to expand research and development investment in clean energy from the current WON560 billion (USD478.1 million) per year to WON1.12 trillion starting from 2021.<sup>2340</sup> “Finance,” “Sharing Best Available Technologies and Best Practices,” “Energy Efficiency Knowledge Sharing Framework.”

Japan has taken actions to improve energy efficiency in eight key areas of G20 Energy Efficiency Leading Program. Thus, it receives a score of +1.

*Analyst: Pavel Doronin*

#### **Mexico: +1**

Mexico has fully complied with the commitment on energy efficiency.

In September 2016, second electricity market auction was organized in Mexico aimed at promoting use of renewable sources in the country.<sup>2341</sup> In the second auction 98 per cent of total solar and wind energy enterprises installed for last 18 years participated. According to Mexican Secretary of Energy Pedro Joaquín Coldwell, 34 companies operating in renewable energy sphere will be established which will add 5,000 megawatts to current electricity generation capacity in Mexico in the next years.

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<sup>2337</sup> Energy Efficiency Upgrade of Existing Buildings in Korea, Korea Energy Agency 15 June 2016. Access date: 11 December 2016. <http://eusew.eu/sites/default/files/programme-additional-docs/04.%20Jin-Ho%20Kim.pdf>.

<sup>2338</sup> 23m for climate technology transfer in developing countries, Energy Live News 25 November 2016. Access date: 27 November 2016. <http://www.energylivenews.com/2016/11/25/23m-for-climate-technology-transfer-in-developing-countries/>.

<sup>2339</sup> Gov’t details its plan to cut carbon emissions, Korea JoongAng Daily 7 December 2016. Access date: 11 December 2016. <http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=3027105&cloc=etc%7Cjad%7Cgooglenews>.

<sup>2340</sup> Gov’t details its plan to cut carbon emissions, Korea JoongAng Daily 7 December 2016. Access date: 11 December 2016. <http://koreajoongangdaily.joins.com/news/article/article.aspx?aid=3027105&cloc=etc%7Cjad%7Cgooglenews>.

<sup>2341</sup> Nutrida participación en la fase inicial de la primera subasta de largo plazo del mercado eléctrico. Access date: 24 November 2016. <http://www.gob.mx/sener/prensa/nutrida-participacion-en-la-fase-inicial-de-la-primera-subasta-de-largo-plazo-del-mercado-electrico>.

The third auction will be held in April 2017. Key areas 3 and 6: Finance, Electricity Generation (High-Efficiency Low Emissions – HELE).<sup>2342</sup>

On 9 September 2016, Mexican Secretary of Energy Pedro Joaquín Coldwell and Executive Director of Mexican Agency for International Development Cooperation (AMEXCID) Gina Casar, inaugurated the meeting of the Commission of Connection of Mexico to the Electrical Interconnection System for Central American Countries (SIEPAC). The Commission will work to integrate the electrical markets of Mexico and the Central American countries through analysis of regulations etc. The event was attended by the Minister of Energy and Mines of Guatemala and the Secretary of Energy of Panama as well as senior representatives and executives of Central American regional electricity market bodies (CDMER, CRIE and EOR). The Commission engages Secretariat of Energy (SENER), National Energy Control Center (CENACE), Federal Electricity Commission (CFE) and AMEXCID Key area 10: Energy Efficiency Knowledge Sharing Framework.<sup>2343</sup>

On 30 September 2016, Mexico and Alberta, province of Canada, signed Memorandum of Understanding (MoU) aimed to strengthen cooperation, in particular in renewable energy. The MoU was signed by Mexican Secretary of Energy Pedro Joaquín Coldwell and Alberta Minister of Energy of Margaret McCuaig-Boyd. As Mr. Coldwell emphasized, Mexico and Canada would their experience in energy sphere regulation and consultation of indigenous peoples in energy projects. In the framework of the signed MoU consultations, workshops, conferences, exchanges and joint studies will be organized to promote cooperation between Mexican and Canadian companies and regulators Key area 10: Energy Efficiency Knowledge Sharing Framework.<sup>2344</sup>

France and Mexico are leading members of the Energy Efficiency Finance Task Group (EEFTG). On 13 October 2016, the EEFTG published their 2016 Activity Report. The report highlights key achievements in the areas of engagement, policy and finance. The report shows progress was made in several of the key areas identified in the commitment features including on energy efficiency, knowledge sharing, sharing best available technologies and practices, and finance.<sup>2345</sup>

On 26 October 2016, the presentation of the progress of the Mexican Energy Reform took place. At the event Mexican Secretary of Energy Pedro Joaquín Coldwell said that up to date 78 per cent of proposed expansion of gas pipelines had been made (Mexican President Enrique Peña Nieto proposed to extend gas pipelines in the industrial zones of the country from 11,000 to 21,000 km by 2019). The total investment to these activities was USD12 billion. The expansion of gas pipelines contributed to a decrease of electricity generation costs and boosted growth of domestic industries

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<sup>2342</sup> Con las primeras dos subastas eléctricas, México triplicó su capacidad en energías renovables: PJC. Access date: 24 November 2016. <http://www.gob.mx/sener/prensa/con-las-primeras-dos-subastas-electricas-mexico-triplico-su-capacidad-en-energias-renovables-pjc-70670?idiom=es>; Se pondrán en operación 16 nuevas plantas eólicas y solares, como resultado de la Primera Subasta Eléctrica. Access date: 24 November 2016. <http://www.gob.mx/sener/prensa/se-pondran-en-operacion-16-nuevas-plantas-eolicas-y-solares-como-resultado-de-la-primera-subasta-electrica?idiom=es>.

<sup>2343</sup> México y Centroamérica avanzan en la integración eléctrica. Access date: 24 November 2016.

<http://www.gob.mx/sener/prensa/mexico-y-centroamerica-avanzan-en-la-integracion-electrica-64543?idiom=es>.

<sup>2344</sup> Con las primeras dos subastas eléctricas, México triplicó su capacidad en energías renovables: PJC. Access date: 24 November 2016. <http://www.gob.mx/sener/prensa/con-las-primeras-dos-subastas-electricas-mexico-triplico-su-capacidad-en-energias-renovables-pjc-70670?idiom=es>.

<sup>2345</sup> Energy Efficiency Finance Task Group (EEFTG), International Partnership for Energy Efficiency Cooperation. Date of Access: 03 April 2017. <https://ipeec.org/cms/21-energy-efficiency-finance-task-group-eeftg-.html>

with use cleaner energy sources. Key areas 6 and 9: Electricity Generation (High-Efficiency Low Emissions – HELE), District Energy Systems (DES).<sup>2346</sup>

On 8 November 2016, Mexican Secretary of Energy Pedro Joaquín Coldwell inaugurated the new combined cycle plant based on natural gas and operated by company Iberdrola in Pesquería, Nuevo León state. The total investment to this project was USD251 million. At the second stage of its operations the plan will have a capacity of 1000 megawatts. The plant will provide electricity to the major manufacturing companies in the region. Key areas 5 and 6: Industrial Processes (Industrial Energy Management), Electricity Generation (High-Efficiency Low Emissions – HELE).<sup>2347</sup>

On 17 October 2016, the Mexican Secretariat of Energy (SENER) announced a plan to collaborate with the Government of Mexico City to promote energy efficient projects. A guarantee fund of more than USD4 million will be created for the energy efficient projects in Mexico City. According to Pedro Joaquín Coldwell, installation of photovoltaic panels in corporate and public buildings as well as private houses could promote clean energy generation. Other projects include use of urban solid waste, installation of biodigesters as well as promotion of solar energy for water heating in hospitals. Key areas 3, 4 and 6: Finance, Buildings, Electricity Generation (High-Efficiency Low Emissions – HELE).<sup>2348</sup>

On 16 November 2016, Mexican Secretary of Energy Pedro Joaquín Coldwell chaired the first ordinary session of the Consultative Council for Energy Transition (CCET) at which the three key instruments of the Energy Transition Law were presented aimed at defining targets and measures for Mexico to move to a low-carbon economy. First instrument is the document of the Transition Strategy to Promote the Use of Cleaner Technologies and Fuels containing a goal of 35 per cent of energy production from clean sources by 2024; 37.7 per cent by 2030 and 50 per cent by 2050. The Strategy also includes a target to reduce energy intensity from 2016 to 2030 by 1.9 per cent and from 2031 to 2050 by 3.7 per cent. The second instrument is the National Programme for Sustainable Energy Use (Programa Nacional para el Aprovechamiento Sustentable de la Energía –PRONASE) which includes the indicators to for the monitor national energy efficiency targets for the period 2016-2018. The third instrument is the Special Program for the Energy Transition which establishes four strategic objectives to increase generation of clean energy; to expand and modernize energy infrastructure; to promote technological development; and to improve access to clean energy for the Mexican citizens. In addition the Atlas of High Clean Energy Potential Zones was presented. The Atlas will be a useful tool for the investors in the clean energy projects in Mexico. The North American Renewable Integration Study (NARIS) was also presented aimed at analyzing coordinated planning and operations impacts under a high renewable energy scenario across North America. Key areas 6, 8 and 11: Electricity Generation (High-Efficiency Low Emissions – HELE), Sharing Best

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<sup>2346</sup> A dos años de la Reforma Energética la administración del Presidente registra un avance del 78 per cent de los kilómetros de ductos planeados: PJC. Access date: 24 November 2016. <http://www.gob.mx/sener/prensa/a-dos-anos-de-la-reforma-energetica-la-administracion-del-presidente-pena-nieto-registra-un-avance-del-78-de-los-kilometros-de-ductos-planeados-pjc?idiom=es>.

<sup>2347</sup> La Reforma Energética fortalece la cadena de suministro de gas natural en el país: PJC. Access date: 24 November 2016. <http://www.gob.mx/sener/prensa/la-reforma-energetica-fortalece-la-cadena-de-suministro-de-gas-natural-en-el-pais-pjc?idiom=es>.

<sup>2348</sup> La SENER colaborará con la Ciudad de México para impulsar proyectos de eficiencia energética. Access date: 23 November 2016. <http://www.gob.mx/sener/prensa/la-sener-colaborara-con-la-ciudad-de-mexico-para-impulsar-proyectos-de-eficiencia-energetica?idiom=es>.

Available Technologies (BATs) and Best Practices, Energy End-Use-Data and Energy Efficiency Metrics.<sup>2349</sup>

On 17 November 2016, Mexico and the European Union announced a project of geothermal systems research aimed at developing and applying new technologies in this field. The project will have a total investment of EUR20 million. The geothermal energy helps to diversify energy mix of the country and reduce carbon emissions. The consortium will bring together Michoacan University of Saint Nicholas of Hidalgo, National Autonomous University of Mexico (UNAM), National Institute of Electricity and Clean Energy (INEEL), Center for Scientific Research and Higher Education at Ensenada (CICESE) and Federal Electricity Commission (CFE) from the Mexican side and GFZ German Research Centre for Geosciences with contributions from of more than 20 institutions from Belgium, France, Germany, Greece, Iceland, Italy, the Netherlands, Poland, Norway and the United Kingdom from the EU side.<sup>2350</sup> Key areas 6 and 8: Electricity Generation (High-Efficiency Low Emissions – HELE), Sharing Best Available Technologies (BATs) and Best Practices

Mexico has taken actions to improve energy efficiency in nine key areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of +1.

*Analyst: Elizaveta Safonkina*

#### **Russia: 0**

Russia has partially complied with the commitment on energy efficiency.

On 21 September 2016, the Russian Ministry of Energy publishes draft Russian Energy Strategy for the Period until 2035. It includes the aim of realizing potential for increasing energy efficiency. It provides for the following measures: development of relevant legislation, including introducing a ban on the production and use of energy ineffective facilities, buildings and technological processes; tax stimulation of the use of best available technologies by companies; financing of projects aimed at increasing energy efficiency from different sources; raising public awareness on the topic. However it does not contain any specific targets.<sup>2351</sup>

On 27 December 2016, President of Russia chaired the State Council meeting on Russia's environmental development for future generations. The participants discussed Russia's transition to a environmentally sustainable development. Russian President emphasized such issues as energy saving, and the preservation of forests, water and unique and said it was necessary "to carry out energy saving and ecological recovery programmes." The report prepared by the State Council "justifies transition to eco-friendly sustainable development as a national strategic priority." It proposed a package of solutions for attaining sustainable development in the medium and long term, including a set of measures for the development of renewable energy sources. Russian President reminded the participants that 2017 was declared the Year of the Environment, and environmental protection was included in the recently approved National Science and Technology Development Strategy as a

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<sup>2349</sup> México cumplirá con su meta del 35 per cent de generación eléctrica con energías limpias en 2024: Consejo Consultivo para la Transición Energética. Access date: 23 November 2016. <http://www.gob.mx/sener/prensa/mexico-cumplira-con-su-meta-del-35-de-generacion-electrica-con-energias-limpias-en-2024-consejo-consultivo-para-la-transicion-energetica?idiom=es>.

<sup>2350</sup> México y la Unión Europea anuncian proyecto para la investigación de sistemas geotérmicos. Access date: 23 November 2016. <http://www.gob.mx/sener/prensa/mexico-y-la-union-europea-anuncian-proyecto-para-la-investigacion-de-sistemas-geotermicos?idiom=es>.

<sup>2351</sup> Russian Energy Strategy for the Period until 2035, Ministry of Energy of Russia 21 September 2016. <http://minenergo.gov.ru/node/1920>

priority.<sup>2352</sup> The strategy, adopted on 1 December 2016, mentions as one of the priorities of Russia's science and technology development the transition to clean and resource efficient energy, increasing efficiency of production and processing of petroleum commodities, development of new sources, means of transportation and storage of energy.<sup>2353</sup>

Russia has taken actions to improve energy efficiency in the a few areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of 0.

*Analyst: Mark Rakhmangulov*

### **Saudi Arabia: 0**

Saudi Arabia has partially complied with the commitment on energy efficiency.

On 4 September 2016, G20 Leaders endorsed the G20 Energy Efficiency Leading Program which adds five new key areas, including District Energy Systems. It will be co-led by Saudi Arabia, China and Russia. Saudi Arabia has already made good progress in district cooling (DC) through: 1) establishing DC arrangements, under the existing Electricity Regulatory Authority; 2) drafting DC Perspective" covering licensing, technical and economic regulation issues and specifications for DC; 3) developing DC threshold standards and arrangement that new public buildings could champion DC; 4) identifying potential DC zones. Key area 9: District Energy Systems (DES)

On 1 October 2016, new regulations related to electric motors entered into force in Saudi Arabia. All electric motors under the scope of the Energy Efficiency Ratio (EER) must meet the minimum energy efficiency rating IE3. The rating IE2 will no longer be accepted at the second stage. Electric motors of specific types excluded from the scope of the EER are now required to be registered with Saudi Standards, Metrology and Quality Organization by exporter or manufacturer and obtain Certificate of Exclusion.<sup>2354</sup> Key area 1: Vehicles

On 31 October 2016, the King Abdullah Petroleum Studies and Research Center published the paper "Evaluating Building Energy Efficiency Investment Options for Saudi Arabia." It states that since 2014 the Saudi government has required the mandatory installation of thermal insulation in walls and roofs for all new buildings as a condition to obtain a connection to the electricity grid. Saudi Arabia has introduced minimum energy performance standards (MEPS) for air conditioning, refrigerators, freezers and washing machines and is preparing regulations to phase out inefficient lighting.<sup>2355</sup> Key area 4: Buildings

On 21 November 2016, the Saudi Arabian government announced that it will start a national program to optimize water and energy consumption. The program will review current incentives for the energy and water sectors. Saudi Arabia aims to reduce electricity and water subsidies by USD53 billion and reduce non-oil subsidies by 20 per cent by 2020.<sup>2356</sup> Key area 3: Finance

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<sup>2352</sup> State Council meeting on Russia's environmental development for future generations, President of Russia 27 December 2016. <http://en.kremlin.ru/events/president/news/53602>

<sup>2353</sup> Executive Order on the Scientific and Technological Development Strategy, President of Russia 1 December 2016. <http://www.kremlin.ru/acts/news/53383>

<sup>2354</sup> Update to Energy Efficiency Requirements for Electric Motors for Saudi Arabia, Intertek 13 November 2016. Access Date: 21 December 2016. <http://www.intertek.com/government/export-import/regulatoryupdates-saudi-eer-electric-motors>.

<sup>2355</sup> Evaluating Building Energy Efficiency Investment Options for Saudi Arabia. King Abdullah Petroleum Studies and Research Center 31 October 2016. Access Date: 21 December 2016. [https://www.kapsarc.org/wp-content/uploads/2016/10/KS-1655-DP049A-Evaluating-Building-Energy-Efficiency-Investment-Options-for-SA\\_web.pdf](https://www.kapsarc.org/wp-content/uploads/2016/10/KS-1655-DP049A-Evaluating-Building-Energy-Efficiency-Investment-Options-for-SA_web.pdf).

<sup>2356</sup> Saudi Arabia to establish national water and energy efficiency program, Reuters 21 November 2016. Access Date: 21 December 2016. <http://www.reuters.com/article/us-saudi-utilities-idUSKBN13G21V>.

On 15 December 2016, the Workshop “Energy Transitions / Utilities of the Future” was held in Riyadh, Saudi Arabia. Its objective was to determine the role of policy design in adopting renewable energy in a cost-effective manner and promoting new industries.<sup>2357,2358</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

Saudi Arabia has taken actions to improve energy efficiency in five key areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of 0.

*Analyst: Aydar Shakirov*

### **South Africa: 0**

South Africa has partially complied with the commitment on energy efficiency.

On 2 November 2016, the Cabinet of Ministers approved the publication of the Integrated Energy Plan (IEP) and the Integrated Resource Plan (IRP) for public comment and engagement. The purpose of the IEP is to “provide a roadmap of the future energy landscape for South Africa which guides future energy infrastructure investments and policy development.”<sup>2359</sup> Key area 3: Finance

On 2-4 November 2016, the Windaba Conference and Exhibition under the theme “Towards 100 per cent renewables” took place. It aimed at boosting government’s renewable energy initiatives. It brings together stakeholders involved in the wind energy value chain on the African continent and in South Africa in particular.<sup>2360</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 4 November 2016, South African Energy Minister Tina Joemat-Pettersson launched the Ngwaabe Integrated Energy Centre (IeC) at Feta-Kgomo Greater Tubatse Municipality. The Centre is a community project aimed at enhancing access to energy in rural areas and is a one-stop energy shop owned and operated by a community Cooperative project. It provides energy solutions to communities, access to affordable, safe and sustainable energy services.<sup>2361</sup> Key area 9: District Energy Systems (DES)

On 8-9 November 2016, the 11th Annual 2016 Southern African Energy Efficiency Convention took place. It focused on a range of energy-related fields: energy engineering, efficiency improvement, facilities and building management, renewable and alternative energy, co-generation, power

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<sup>2357</sup> Energy Transitions/Utilities of the Future, KAPSARC 15 December 2106. Access Date: 21 December 2016. [https://www.kapsarc.org/news-events/month\\_events/2016/12/#energy-transitionsutilities-of-the-future](https://www.kapsarc.org/news-events/month_events/2016/12/#energy-transitionsutilities-of-the-future).

<sup>2358</sup> King Salman inaugurates King Abdullah Petroleum Studies and Research Center, KAPSARC 21 January 2016. Access Date: 21 December 2016. <https://www.kapsarc.org/news/saudi-king-inaugurates-king-abdullah-petroleum-studies-and-research-center/>.

<sup>2359</sup> Media Briefing on the IEP and IRP 22 November 2016 By Honourable Tina Joemat-Pettersson, MP Minister of Energy, Department of Energy of South Africa 2 November 2016. Access date: 12 January 2017. <http://www.energy.gov.za/files/media/speeches/2016/Media-Briefing-on-the-IEP-and-IRP-by-the-Minister-22Nov2016.pdf>.

<sup>2360</sup> Statement on Cabinet meeting of 1 and 2 November 2016, Department of Energy of South Africa 3 November. Access date: 12 January 2017. <http://www.energy.gov.za/files/media/pr/2016/Statement-on-Cabinet-meeting-of-1-and-2November2016.pdf>.

<sup>2361</sup> Media Statement Launch Of Ngwaabe Integrated Energy Centre, At Ngwaabe Village, Department of Energy of South Africa 4 November 2016. Access date: 12 January 2017. <http://www.energy.gov.za/files/media/pr/2016/MediaStatement-Launch-of-Ngwaabe-Integrated-Energy-Centre-at-Ngwaabe-Village-04November2016.pdf>.

generation, energy services and sustainability.<sup>2362</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

South Africa has taken actions to improve energy efficiency in four key areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of 0.

*Analyst: Irina Popova*

### **Turkey: -1**

Turkey has not complied with the commitment on energy efficiency.

In Turkey several policies on energy efficiency in buildings and industry are being implemented. “Improving Energy Efficiency in Building Sector” policy was launched in 2008 and requires buildings “to meet the minimum performance criteria and standards concerning architecture, heat insulation, heating and cooling systems and electrification.”

“Support Scheme for Energy Efficiency in Industry” was also launched in 2008 by Ministry of Energy and Natural Resources in order to lower CO2 emissions in industry.

Also on 27 February 2012 The Energy Efficiency Strategy 2012 – 2023 was approved by Turkey’s High Planning Council and set a long-term target of 20 per cent reduction in energy intensity by 2023 compared to 2011 figures. The strategy document provides a roadmap of energy-efficiency actions for all sectors of Turkey’s economy. It also identifies measurable, concrete policy activities necessary for reaching the targets.<sup>2363</sup> This plan includes actions on several key areas of the G20 Energy Efficiency Leading Programme: key area 1: vehicles, key area 3: finance, key area 4: buildings, key area 5: industrial processes (Industrial Energy Management), key area 6: electricity generation (High-Efficiency Low Emissions – HELE)

Although Turkey has several working projects on energy efficiency, no actions in the area within the compliance period have been registered.

Turkey has not taken any actions to improve energy efficiency in any key areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of -1.

*Analyst: Irina Popova*

### **United Kingdom: 0**

The United Kingdom has partially complied with the commitment on energy efficiency.

On 23 October 2016, the government committed an additional GBP4 million to the Plug-In Van grant scheme extending the eligibility to larger electric vehicles. Electric trucks above 3.5 tonnes eligible for grants of up to GBP20,000. Scheme will help improve air quality in towns and cities.<sup>2364</sup>

Key area 1: Vehicles

On 9 November 2016, the UK and Indian governments announced the creation of a GBP7.4 million research fund established to improve energy demand reduction in the built environment... in an

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<sup>2362</sup> Statement on Cabinet meeting of 1 and 2 November 2016, Department of Energy of South Africa 3 November. Access date: 12 January 2017. <http://www.energy.gov.za/files/media/pr/2016/Statement-on-Cabinet-meeting-of-1-and-2November2016.pdf>.

<sup>2363</sup> TR-2:Energy Efficiency Strategy, Industrial Efficiency policy Database. . Access date: 16 January 2017. <http://iepd.iipnetwork.org/policy/energy-efficiency-strategy>.

<sup>2364</sup> £4 Million Boost to Help Businesses Switch Vans and Trucks to Electric 23 October 2016. Access Date: 15 December 2016. <https://www.gov.uk/government/news/4-million-boost-to-help-businesses-switch-vans-and-trucks-to-electric>.

attempt to “improve health and wellbeing and lower energy costs for building users.”<sup>2365</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 9 November 2016, British Deputy High Commissioner in Mumbai, Kumar Iyer said: “I am delighted to witness the collaboration between Sensus and MSEDCL. This is a great example of UK-India collaboration on enhancing energy security. This partnership aligns with the Government of India's National Smart Grid Mission. The UK is committed to working closely with India on innovative technologies to help meet its electricity demand. With Sensus deploying its Advance Metering Infrastructure solution in Maharashtra, I am certain that it will help in improving access to electricity in India.”

“MSEDCL has been a leading utility in India in testing and deploying new technology in Electricity distribution. It gives us immense pleasure to implement communication technology of M/s. Sensus in the field of advance metering infrastructure on trial basis. We are hopeful that trial run will help us and establishing utility of the robust AMI solution of M/s. Sensus on affordable cost. We look forward to further advance this partnership resulting into mutually beneficial relationship,” said CMD MSEDCL, Sanjeev Kumar.<sup>2366</sup> Key area 11: Energy End-Use-Data and Energy Efficiency Metrics

On 10 November 2016, Energy UK's fourth Annual Conference – “Progress to our energy future” took place. During the conference industry-wide delegates met with government, energy experts and consumer bodies to discuss the “future energy mix, consumer engagement, technology and innovation and financing our future energy system.”<sup>2367</sup> Key area 8: Sharing Best Available Technologies (BATs) and Best Practices

On 22 December 2016, UK Energy Statistics, Q3 2016 was published. According to it, “half of the UK's electricity came from wind turbines, solar panels, wood burning and nuclear reactors between July and September.” This is the record number for the electricity generated from low-carbon sources.<sup>2368</sup> Key area 6: Electricity Generation (High-Efficiency Low Emissions – HELE)

The UK has taken actions to improve energy efficiency in four key areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of 0.

*Analyst: Elina Nizamova*

### **United States: 0**

The United States has partially complied with the commitment on energy efficiency.

On 22 November 2016, the Princeton Plasma Physics Laboratory, which is the part of the Exascale Computing Project and a major component of President Obama's National Strategic Computing Initiative, declared that it was developing a computer program that would run on the next generation

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<sup>2365</sup> UK and India Announce £7 Million Research Fund to Improve Building Energy Efficiency 9 November 2016. Access Date: 15 December 2016. <http://www.cleanenergynews.co.uk/news/efficiency/uk-and-india-announce-7-million-research-fund-to-improve-building-energy-ef>.

<sup>2366</sup> MSEDCL partners with Sensus to implement advanced metering infrastructure solution in Maharashtra 9 November 2016. Access Date: 15 December 2016. <https://www.gov.uk/government/world-location-news/msedcl-partners-with-sensus-to-implement-advanced-metering-infrastructure-solution>.

<sup>2367</sup> Annual Conference, Energy UK. Access date: 12 January 2016. <https://www.energy-uk.org.uk/events/category/annual-conference.html>.

<sup>2368</sup> UK Energy Statistics, Q3 2016, Department for Business, energy and Industrial Strategy. Access date: 12 January 2016. [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/579543/Press\\_Notice\\_December\\_2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/579543/Press_Notice_December_2016.pdf).

of supercomputers with the aim of bringing “fusion energy closer to reality and has already succeed in computer codes combinations (called GENE and XGC), which provide a holistic view of the entire plasma volume.”<sup>2369</sup> (Key area 2: Networked Devices, Key area 3: Finance)

On 22-23 November 2016, the US Department of Energy’s Indian Energy Office held a Tribal Energy Program review meetings to enable tribes and Alaska Native villages to share their experience, successes and practices (to explore or deploy weatherization, efficiency of energy, and renewable energy technologies).<sup>2370</sup> (Key area 8: Sharing Best Available Technologies (BATs) and Best Practices)

On 30 November 2016, the US Department of Energy’s (DOE’s) Bioenergy Technologies Office declared the Bioenergy Separations Consortium establishment — “a consortium of eight DOE national laboratories leading coordinated research to move cost-effective, high-performing separations technologies to market.”<sup>2371</sup> (Key area 7: Super-Efficient Equipment and Appliance Deployment initiative (SEAD))

On 5-6 October 2016, the Biorefinery Optimization Workshop, hosted by the US Department of Energy’s Bioenergy Technologies Office, was held in Chicago, Illinois. The aim was to advance the current capabilities, barriers, and opportunities understanding for integrated biorefineries working on biofuels, biochemicals, and bioproducts production.<sup>2372</sup> (Key area 10: Energy Efficiency Knowledge Sharing Framework)

On 11 October 2016, the National Renewable Energy Laboratory, a part of The US Department of Energy’s Office of Energy Efficiency and Renewable Energy, leading petroleum refining technologies supplier W.R. Grace and leading pilot plant designer Zeton Inc. “built a unique pilot-scale facility that can produce biomass-derived fuel intermediates with existing petroleum refinery infrastructure.”<sup>2373</sup> (Key area 4: Buildings)

On 1 December 2016, the US Department of Energy Office of Energy Efficiency and Renewable Energy, on behalf of the Bioenergy Technologies Office, announced the plan of “issuing a funding opportunity announcement for up to USD8 million for the Algae-Based Biofuels Development.”<sup>2374</sup> (Key area 3: Finance)

The US has taken actions to improve energy efficiency in six key areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of 0.

*Analyst: Irina Sedova*

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<sup>2369</sup> Tapping the Next Generation of Supercomputers to Bring Fusion Energy to the World, the US Energy Department Official Website 22 November 2016. Access date: 8 December 2016. <http://www.energy.gov/articles/tapping-next-generation-supercomputers-bring-fusion-energy-world>.

<sup>2370</sup> Tribal Energy Program review, the US Energy Department Official Website 23 November 2016. Access date: 8 December 2016. <http://www.energy.gov/indianenergy/tribal-energy-deployment-program-review>.

<sup>2371</sup> BETO Launches Multi-Lab Consortium to Advance Separations Technology, the US Energy Department Official Website 30 November 2016. Access date: 8 December 2016. <https://energy.gov/eere/bioenergy/articles/beto-launches-multi-lab-consortium-advance-separations-technology>.

<sup>2372</sup> BETO Hosts Biorefinery Optimization Workshop October 5–6, the US Energy Department Official Website 11 October 2016. Access date: 8 December 2016. <http://energy.gov/eere/bioenergy/listings/bioenergy-news>.

<sup>2373</sup> New Pilot Plant Demonstrates the Potential to Co-Process Biomass Streams with Petroleum, the US Energy Department Official Website 11 October 2016. Access date: 8 December 2016. <https://energy.gov/eere/bioenergy/articles/new-pilot-plant-demonstrates-potential-co-process-biomass-streams-petroleum>.

<sup>2374</sup> BETO Announces Notice of Intent for the Development of Algae-Based Biofuels, the US Energy Department Official Website 1 December 2016. Access date: 12 December 2016. <http://energy.gov/eere/bioenergy/articles/beto-announces-notice-intent-development-algae-based-biofuels>.

## European Union: 0

European Union has partially complied with the commitment on energy efficiency.

On 9 September 2016, the European Commission leaders and Energy Ministers from 12 EU and Energy Community countries in Central and South-Eastern Europe signed infrastructure and regional cooperation agreements related to the European Commission Initiative on Central and South-Eastern European Gas Connectivity (CESEC). Ministers decided to move the CESEC's cooperation into new areas, in particular to boost renewable energy and energy efficiency.<sup>2375</sup> Key area 3: Finance

On 9 September 2016, the European Commission approved support for a Combined Heat and Power plant in Vilnius, Lithuania, under EU state aid rules. The project will get state aid granted by the Government of Lithuania. The Commission found that the project promotes energy efficiency with expected energy savings of around 40 per cent. The Commission concluded that the state aid would not lead to undue competition distortions and is in line with EU rules.<sup>2376</sup> Key areas 3 and 5: Finance, Industrial Processes (Industrial Energy Management)

On 7 October 2016, European Commission Vice-President Šefčovič announced that the next EU steps in energy efficiency will include the revision and update of the Energy Efficiency Directive and the Energy Performance of Buildings Directive. The aim is to update the existing energy efficiency policy and legal framework to reflect the new energy efficiency target for 2030.<sup>2377</sup> Key area 4: Buildings

On 12 October 2016, the Commission launched a new web portal "One-stop shop" which provides up-to-date information on EU policies such as climate change adaptation, mobility or circular economy that directly impact cities and urban areas. Cities can also get information on financing opportunities under the different EU funding instruments. It will help cities to address challenges, such as affordable housing, energy efficiency or accessibility.<sup>2378</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

On 24 October 2016, Commissioner Arias Cañete gave a speech at the Business Europe Power Market Event. He stated that the EU will allocate 17 billion euros to energy projects targeting renewables, energy efficiency and smart meters deployment. The priority will be given to the building sector.<sup>2379</sup> Key area 3: Finance

On 26 October 2016, the European Union announced new programs to support sustainable development in Latin America and the Caribbean. EUR9.2 million were allocated to the technical assistance program for sustainable energy in the Caribbean region. The assistance will be clustered in three main areas: 1) adopting regulatory frameworks that enable investments in new renewable energy

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<sup>2375</sup> Energy: Successful energy cooperation for Central and South-Eastern European Countries continues, European Commission 9 September 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_IP-16-2982\\_en.htm](http://europa.eu/rapid/press-release_IP-16-2982_en.htm).

<sup>2376</sup> State aid: Commission authorizes support for a highly efficient cogeneration power plant in Lithuania, European Commission 19 September 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_IP-16-3105\\_en.htm](http://europa.eu/rapid/press-release_IP-16-3105_en.htm).

<sup>2377</sup> Speech of Vice-President Šefčovič at the Inter-Parliamentary Meeting of the European Forum for Renewable Energy Sources, European Commission 7 October 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_SPEECH-16-3342\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-16-3342_en.htm).

<sup>2378</sup> Urban Agenda: new knowledge sources available for Europe's cities, European Commission 12 October 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_MEX-16-3427\\_en.htm](http://europa.eu/rapid/press-release_MEX-16-3427_en.htm).

<sup>2379</sup> Speech by Commissioner Arias Cañete at the Business Europe Power Market Event, European Commission 24 September 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_SPEECH-16-3526\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-16-3526_en.htm).

and energy efficiency technologies; 2) setting up financing mechanisms for the development of energy efficiency and renewable energy projects; 3) improving information and statistics.<sup>2380</sup> Key areas 3 and 8: Finance, Sharing Best Available Technologies (BATs) and Best Practices

On 27 October 2016, Commissioner Arias Cañete announced that the EU will create a Smart Finance for Smart Buildings Initiative in order to help finance renovation and retrofitting in largely inefficient housing stock. The Initiative will help remove the barriers in this sector, aggregate demand and de-risk investments.<sup>2381</sup> Key areas 3 and 4: Finance, Buildings

On 11 November 2016, the European Commission announced the investment plan for energy efficiency and innovation in Finland worth EUR170 million. It will support two innovative companies in Finland in the form of loans from the European Investment Bank. The first of them is a EUR150 million loan to SATO to construct new near-zero-energy buildings in urban areas around Finland.<sup>2382</sup> Key areas 3 and 4: Finance, Buildings

On 24 November 2016, European Commission Vice-President for Energy Union Maroš Šefčovič and Energy Minister of Ukraine, Ihor Nasalyk, signed a new Memorandum of Understanding on a Strategic Energy Partnership between the EU and Ukraine. The MOU will broaden the cooperation in all areas, including energy efficiency and renewable energy.<sup>2383</sup> Key area 10: Energy Efficiency Knowledge Sharing Framework

European Union has taken actions to improve energy efficiency in five key areas of the G20 Energy Efficiency Leading Programme. Thus, it receives a score of 0.

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<sup>2380</sup> EU support to the Community of Latin America and Caribbean States (CELAC), European Commission 26 October 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_IP-16-3542\\_en.htm](http://europa.eu/rapid/press-release_IP-16-3542_en.htm).

<sup>2381</sup> Speech by Commissioner Arias Cañete at Eurelectric: Winter [Package] is Coming: Getting the Energy Union Right, European Commission 27 October 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_SPEECH-16-3566\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-16-3566_en.htm).

<sup>2382</sup> Investment Plan for Europe: €170 million for energy efficiency and innovation in Finland, European Commission 11 November 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_MEX-16-3667\\_en.htm](http://europa.eu/rapid/press-release_MEX-16-3667_en.htm).

<sup>2383</sup> EU-Ukraine Summit: EU and Ukraine intensify energy partnership, European Commission 24 November 2016. Access date: 21 December 2016. [http://europa.eu/rapid/press-release\\_IP-16-3926\\_en.htm](http://europa.eu/rapid/press-release_IP-16-3926_en.htm).