

○未来投資戦略 2018 — 「Society 5.0」「データ駆動型社会」への変革—  
 (平成 30 年 6 月 15 日閣議決定) (抄)

第 2 具体的施策

I. 「Society 5.0」の実現に向けて今後取り組む重点分野と、変革の牽引力となる「フラッグシッププロジェクト」等

[2] 経済活動の「糧」が変わる

(3) 新たに講ずべき具体的施策

ii) IoT、AI 等を活用したエネルギー・環境関連ビジネスの革新

- ① IoT、AI、ブロックチェーン等を活用した高度なエネルギー・マネジメントの推進  
 ・ビッグデータ分析等を活用して行動変容を促す情報発信（ナッジ）等による国民運動の展開  
 や省エネガイドラインの整備により、低炭素型製品・サービス・ライフスタイルのマーケット拡大を図る。

○経済財政運営と改革の基本方針 2018～少子高齢化の克服による持続的な成長経路の実現～  
 (平成 30 年 6 月 15 日閣議決定) (抄)

第 3 章 「経済・財政一体改革」の推進

5. 歳出改革等に向けた取組の加速・拡大

行動変容に働きかける取組を加速・拡大する観点から、成果をより定量的に把握できる形に改革工程表の KPI を見直すとともに、こうした取組への予算の重点配分、見える化や効果的な情報発信・選択肢の提示などによる後押しの強化<sup>210</sup>を進めていく。取組の進捗状況を踏まえた評価・見える化を行い、各省庁の予算要求に反映することとともに、予算編成過程において政策効果に基づいたメリハリのある予算に組み替える。

<sup>210</sup> 例えば、ナッジ (Nudge) と呼ばれる手法は、個人の選択の自由を阻害することなく、各自がより良い選択を行うよう、情報発信や選択肢の提示の方法を工夫するもので、政策分野においても応用されている。

## G20 ENERGY MINISTERS COMMUNIQUÉ

15 June 2018, Bariloche, Argentina

We, the G20 Energy Ministers, met in San Carlos de Bariloche (Argentina), on 15 June, 2018, to promote the role of energy in promoting fair and sustainable development, building upon the invaluable outcomes of the previous Presidencies and Ministerial Meetings.

We recognise the crucial role of energy in helping shape our shared future, within different national circumstances, as well as the need to transform our energy systems, in line with the spirit of the 2030 Agenda for Sustainable Development, as well as the need for persistent actions to address the global challenges, including climate change and energy security. We welcome the progress achieved during Argentina's G20 Presidency 2018 in dealing with key topics such as Energy Transitions, Energy Efficiency, Renewable Energy, Data Transparency, and Energy Access and Affordability, and take note of the five Presidency documents produced with the valued support of several prestigious international organisations.

We emphasise our commitments to work towards low greenhouse-gas (GHG) emissions through, among others, increased innovation on sustainable and cleaner energy systems. As highlighted by the Energy Transitions Working Group (ETWG), we recognise that energy transitions are an essential element of long-term development strategies that should combine economic growth with decreasing GHG emissions. We acknowledge the importance of energy transitions to achieve emissions reductions and for those countries that are determined to implement the Paris Agreement; and we note the linkage between country-driven energy transitions that provide affordable and reliable energy and the important role of energy markets and innovation in providing energy security, economic growth, and a cleaner environment.

### Energy Transitions towards Cleaner, more Flexible and Transparent Systems

Germany's G20 Presidency 2017, supported by the G20 membership, emphasised the topic of energy transition, and stated that G20 members should lead the transition and jointly work to transform our energy systems into affordable, reliable, sustainable and low GHG emissions systems as soon as possible.

We welcome the approach of Argentina's G20 Presidency, which recognises that there are different possible national paths to achieve cleaner energy systems - while promoting sustainability, resilience and energy security - under the term "transitions" (in plural). This view reflects the fact that each G20 member - according to its stage of development - has a unique and diverse energy system as starting point, with different energy resources, demand dynamics, technologies, stock of capital, geographies and cultures.

At a worldwide level, while it is important to acknowledge that fossil fuels still play a major role, we stress the need to successfully transform energy systems, by increasing investments in cleaner technologies, cooperation in energy efficiency and deployment of renewables and innovation. We reaffirm G20's leading role in encouraging effective

energy transitions processes, through combined efforts on both the demand and supply sides. These processes should involve a cost-effective approach, including in their design not only environmental, but also social and economic dimensions. We intend to collaborate closely to successfully address these challenges, with a view to foster economic growth and welfare.

- Energy Efficiency

Energy efficiency has been prioritised by G20 members and has also become one of the pillars of the 2030 Agenda for Sustainable Development, due to its contribution to energy security, industrial competitiveness, emissions reduction, economic growth, job creation and others social benefits when introduced in a cost-effective manner.

International collaboration, including through the G20, is critical to effectively support the design and implementation of national energy efficiency policies and programmes. We recognise the work of the Task Groups of the Energy Efficiency Leading Programme (EELP) in different sectors and uses. We also encourage to significantly scale up public and private investments and financing in energy efficiency across all sectors to help to achieve the energy transitions.

Building on past achievements, Argentina's G20 Presidency 2018 continues to support these efforts and has proposed to consider and promote other critical aspects that contribute to the success of energy efficiency policy options, such as Behaviour Change initiatives. Behaviour Change can act as a bridge between innovation, technological progress, and nationally driven energy efficiency measures, delivering greater benefits for consumers and all sectors of the economy. We will include Behaviour Change in the current EELP implementation plan.

- Renewable Energy

The progress achieved with regard to the development and deployment of renewable energy has been remarkable, benefitting from innovation and in part from significant cost reductions (notably for solar and wind, which are now cost competitive in many cases), but much more progress will be needed, not only in G20 member countries, but also worldwide. We encourage G20 members that opt to enhance their renewable energy strategies considering national circumstances, needs and priorities to accelerate their implementation, where appropriate.

We encourage increased investment and financing in renewable energy production, including through barrier reduction and risk mitigation initiatives, which is particularly important for developing countries.

We recognise that system integration of variable renewable energy is crucial for electricity security and expanded deployment of renewables, which includes a number of elements, such as regional integration of grids, flexible power plants, electricity storage, grid stabilisation through digital technologies and demand-side management. We acknowledge the benefits of international collaboration. G20 members would foster efforts to take the lead to provide market design options that can be used to adapt electricity markets, facilitating their ability to integrate higher shares of variable renewables. We note that baseload generation remains an essential element of energy security, depending on national circumstances and preferences. In this regard, for many countries large-scale hydropower plays a key role.

Renewable energy progress should be accelerated beyond the power sector. We acknowledge that some renewable energy sources, such as bioenergy (including biofuels), solar and geothermal energy, can play an important role in some G20 countries in reducing emissions in the transportation, heating and cooling, and industrial sectors worldwide, depending on national circumstances and conditions.

- Natural Gas

We recognise the key role that natural gas currently plays for many G20 countries, and its potential to expand significantly over the coming decades, supporting transitions towards lower emission energy systems. We will endeavour to improve the functioning, transparency and competitiveness of gas markets, with a strategic view of the supply chain - including Liquefied Natural Gas (LNG) and storage facilities - at a global level. We will encourage an expanded dialogue with relevant international organisations on more effective and flexible use of natural gas.

- Other Fossil Fuels

For those G20 countries that opt to continue utilising fossil fuels will endeavour to spur innovation through the use of advanced and cleaner technologies which will contribute to reduce emissions and encourage investment and financing in advanced and cleaner fossil fuels technology options (including Carbon Capture, Utilisation and Storage). We reaffirm the importance of using the most advanced and cleaner technologies in order to address the environmental impacts, including GHG emissions, of the production, transport and consumption of fossil fuels. We encourage countries to enhance cooperation in developing and applying best available technologies.

- Inefficient Fossil Fuel Subsidies that encourage wasteful consumption

In 2009, the Pittsburgh Leaders Declaration called for medium term rationalisation and phasing-out of Inefficient Fossil Fuel Subsidies that encourage wasteful consumption while providing targeted support for the poorest. We reaffirm this joint commitment. We welcome the efforts made by those G20 members who have already participated in voluntary peer reviews, and we encourage those who have not yet done so to initiate their peer reviews as soon as feasible.

- Nuclear Energy

For those countries that opt to use nuclear energy, it contributes to the reduction of GHG emissions and to baseload and the significant innovations underway (including in small modular and advanced reactors) were noted. We call upon these countries to uphold the highest standards of nuclear safety, security and non-proliferation, including the compliance with an independent and effective regulator, and to exchange their expertise and experiences.

- The Key Role of Innovation

We will foster innovation as one of the key drivers of the energy transitions processes. We will encourage and facilitate research, development, demonstration and deployment (RDD&D) of innovative, cleaner and efficient energy technologies, recognising the need for these to be competitive and commercially viable. We will encourage greater cooperation in developing, sharing and applying best available technologies, and will also encourage multilateral development banks and finance institutions to facilitate investment, and technology transfer. We will support flexible energy systems and distributed generating capacities.

- Energy Data Transparency and Markets Digitalisation

We recognise that more robust and comprehensive energy data is important for effective decision-making to face the challenges of our energy transitions. We will promote market digitalisation - minimising the risks of malicious use of ICT technologies - with a view to increase flexibility and enable integration across entire systems, as well as to open up the opportunity for millions of consumers, producers and investors to sell electricity or provide valuable services to the grid. We will encourage G20 members to foster closer collaboration among international, regional and national organisations, to set up training programmes to build and implement capacity for energy data collection and management.

## Energy Security

We acknowledge energy security as one of the guiding principles for the transformation of our systems, and will continue to promote policy options that facilitate open, flexible, transparent, competitive and reliable markets for energy commodities and technologies. We stress the importance of diversification of energy sources, suppliers and routes, and the need to facilitate the proper conditions for continued and increasing investments to ensure sustainable, affordable, reliable, resilient and cleaner energy systems. Investment in infrastructure is essential, but a persistent financial gap remains. We encourage increased contributions from both public and private financial resources.

## Energy Access and Affordability

We recognise that energy is at the heart of economic growth and sustainable development, and that access to modern energy services and clean cooking facilities is one of the prerequisites for social and economic development. We reaffirm our commitments to promote universal energy access, with special emphasis on the need to eradicate energy poverty and ensure gender equality across the value chain. Fostering cooperation on energy access in disaster-impacted and remote areas is particularly important. We also recognise the need to provide access to displaced people.

We note the “Energy Access and Affordability Voluntary Action Plan for Latin America and the Caribbean” put forward by Argentina’s G20 Presidency, which highlights the need to tackle energy service cost and affordability issues, in addition to access challenges. We will explore ways to further advance energy access, including through enhanced implementation of G20 regional plans and increase international financing for access, in particular for those countries that have limited financial resources.

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We would like to thank the Argentine Presidency for their tireless efforts and excellent leadership. We will submit this Communiqué to the G20 Leaders Summit to be held in Buenos Aires, on Nov. 30-Dec. 1, 2018, and agree to continue cooperating to ensure further progress during Japan’s G20 Presidency 2019.