

## 15TH INTERNATIONAL ENERGY FORUM MINISTERIAL

Algiers, 26-28 September 2016  
International Conference Center of Algiers

### THEME GLOBAL ENERGY TRANSITION: AN ENHANCED ROLE FOR ENERGY DIALOGUE

#### Annotated Agenda as of 23/09/2016

The 15th International Energy Forum Ministerial Meeting (IEF15), to be held on 26-28 September, in Algiers, marks the 25th anniversary of the global energy dialogue. It is an opportunity to celebrate its achievements, and to discuss ways and means to further strengthen it in the future. When looking back to past accomplishments, it is clear that the International Energy Forum has achieved many of its goals, such as the Joint Organizations Data Initiative; but challenges remain, in particular in regard to the predictability and sustainability of the IEF Secretariat financial resources.

Since IEF14 (Moscow, May 2014), the global energy scene has evolved dramatically, with short- to long-term consequences. International oil prices have been more than halved, on the back of weak global economic expansion and oversupply. Oil exporting country revenues have declined substantially. Globally, investments have been reduced to very low levels, inducing a potential risk of supply shortages in the medium-term. World refinery capacity has expanded, while crude oil and products stocks reached record levels. The interaction between physical and financial markets has become even more complex.

Natural gas markets have witnessed a similar evolution, with prices declining as a result of large production capacity coming on-stream worldwide, notably of liquefied natural gas, weaker demand than expected, and competition from other energy sources, including coal, in particular in regions where power and carbon markets do not function to the advantage of natural gas.

Renewables continued to expand rapidly, with wind and solar growing at the fastest pace, benefiting from highly favorable policies and substantial cost reductions.



The 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change reached a landmark agreement in Paris last year that will lead the global effort in combating and adapting to climate change. It sets an ambitious goal of holding the increase in the global average temperature to well below 2°C above pre-industrial levels. Mitigation, adaptation, provision of financial support, technology transfer, and capacity building, are components that will have medium- to long-term substantial consequences on the energy sector. Most countries have included the latter in their intended nationally determined contributions.

In September 2015, the United Nations reached another landmark agreement, namely the 2030 Agenda for Sustainable Development, which includes seventeen Sustainable Development Goals (SDGs), including the energy related goal to “ensure access to affordable, reliable, sustainable and modern energy for all”.

These evolutions demonstrate that interdependency remains a key feature of the world energy scene, and underline a greater need for global energy dialogue. IEF15, with participation of ministers from countries representing an overwhelming share of world energy production and consumption, as well as from intergovernmental organizations and the industry, offers a unique platform to exchange views in an informal way on current conditions and future prospects of the energy scene, as well as to discuss ways and means to address world’s energy challenges.

## Session Structure

The program of IEF15 is structured around four sessions and two roundtables, covering today’s most critical issues in global energy dialogue.

- Session 1:** Oil markets outlook and the stability challenge
- Session 2:** Natural gas: challenges for the industry, the LNG chain and implications for market structure
- Session 3:** Renewables and energy efficiency: prospects and challenges after COP21
- Session 4:** Energy governance: global energy dialogue revisited
- Roundtable 1:** Sustainable energy access: a critical factor for human development
- Roundtable 2:** Enhancing energy security: the role of technology

## AGENDA WITH TIMING, PANELISTS AND SPEAKERS

### PRE-OPENING DAY, MONDAY 26 SEPTEMBER 2016

10:00 - 20:00	<b>REGISTRATION</b> Registration desk (Pre-registration required online) SHERATON HOTEL AND AURASSI HOTEL
19:30 - 21:30	<b>WELCOMING RECEPTION AND NETWORKING</b> Reception Room, Sheraton Hotel

### DAY 1, TUESDAY 27 SEPTEMBER 2016

06:00 - 17:00	<b>REGISTRATION</b> Registration desk (Pre-registration required online) SHERATON HOTEL AND AURASSI HOTEL
07:00 - 08:45	SEATING FOR INAUGURAL SESSION
9:00 - 9:30	<b>INAUGURATION SESSION</b> <b>Welcoming remarks and opening messages</b>  <i>Plenary room / Open to all delegates, guests and the press</i>  Opening video and host-country announcements Welcoming address by HE the Minister of Energy of Algeria Introductory remarks by HE the IEF Secretary General Opening address by HE the Prime Minister of Algeria
9:30 - 10:00	<b>HODs Group Photos and Courtesy Reception with HE the Prime Minister of Algeria</b>

## PLENARY SESSION 1

### Oil markets: outlook and the stability challenge

*Plenary room / Open to delegates only*

10:00 - 10:05 **Chair's opening remarks by HE Nouredine Boutarfa, Minister of Energy, Algeria**

10:05 - 10:20 Panelists' presentations / speeches

- HE Mohammad Sanusi Barkindo, Secretary General, OPEC
- HE Dr Fatih Birol, Executive Director, IEA
- HE Dr Xiansheng Sun, Secretary General, IEF

10:20 - 10:45 Discussants' comments

- HE Eng. Bijan Namdar Zanganeh, Minister of Petroleum, Iran
- HE Anas Khaled Al-Saleh, Deputy Prime Minister, Minister of Finance and Acting Minister of Oil, Kuwait
- HE Alexander Novak, Minister of Energy, Russian Federation
- HE Khalid A. Al-Falih, Minister of Energy, Industry and Mineral Resources, Saudi Arabia
- HE Eulogio Del Pino, People's Minister of Petroleum, Venezuela
- Mr Patrick Pouyanné, Chief Executive Officer, Total
- Mr Mike Muller, Vice-president of Crude Trading, Shell

10:45 - 10:50 Interactive survey

10:50 - 11:20 Debate and Q&A

10:00 - 11:20

## BILATERAL MEETING, NETWORKING AND COFFEE BREAK

*Hallways and reserved bilateral rooms*

11:20 - 11:40

## PLENARY SESSION 2

### Natural gas: challenges for the industry, the LNG chain and implications for market structure

*Plenary room / Open to delegates only*

11:40 - 11:45      **Chair's opening remarks by HE Mohammed Bin Saleh Al-Sada, Minister of Energy and Industry, Qatar**

11:45 - 11:55      Panelists' presentations / speeches

- HE Dr S. M. Hossein Adeli, Secretary General, GECF
- HE Pål Rasmussen, Secretary General, IGU

11:40 - 13.00

11:55 - 12:25      Discussants' comments

- HE Nuer Baikeli, Vice-Chairman of the National Development and Reform Commission, Administrator of the National Energy Administration, China
- HE Jabbar Ali Hussein Al-Luiebi, Minister of Oil, Iraq
- HE Carlo Calenda, Minister of Economic Development, Italy
- HE Yosuke Takagi, State Minister of Economy, Trade and Industry, Japan
- HE Uwe Beckmeyer, Parliamentary State Secretary, Germany
- Mr Michał Kurtyka, Undersecretary of State, Ministry of Energy, Poland
- Mr Amine Mazouzi, Chairman and CEO, Sonatrach

12:25 - 12:30      Interactive survey

12:30 - 13:00      Debate and Q&A

13:00 - 15:00

## OFFICIAL LUNCH:

**Hosted by HE the Prime Minister of Algeria for HODs (CIC VIP room)**

**Lunch for Delegates (CIC Oasis restaurant)**

<p>15:00 - 16:30</p>	<p><b>PLENARY SESSION 3</b>  <b>Renewables and energy efficiency : prospects and challenges after COP 21</b></p> <p><i>Plenary room / Open to delegates only</i></p> <p>15:00 - 15:05    <b>Chair's opening remarks by HE Ségolène Royal, Minister of Environment, Energy and the Sea, France</b></p> <p>15:05 - 15:20    Panelists' presentations / speeches IRENA</p> <p>15:20 - 15:40    Discussants' comments</p> <ul style="list-style-type: none"> <li>• HE Henk Kamp, Minister of Economic Affairs, Netherlands</li> <li>• HE Hela Cheikhrouhou, Minister of Energy, Mining and Renewable Energy, Tunisia</li> <li>• HE Suhail Mohamed Al Mazrouei, Minister of Energy, UAE</li> <li>• Mr Jonathan Elkind, Assistant Secretary for International Affairs, USA</li> <li>• Dr Gertjan J. Lankhorst, Chief Executive Officer, Gasterra</li> </ul> <p>15:40 - 15:45    Interactive survey</p> <p>15:50 - 16:30    Debate and Q&amp;A</p>
<p>16:30 - 19:00</p>	<p><b>BILATERAL MEETING, NETWORKING AND COFFE BREAK</b></p> <p>Hallways and reserved bilateral rooms</p>
<p>19:00 - 21:30</p>	<p><b>OFFICIAL RECEPTION AND DINNER</b></p> <p><i>Palais des Nations / Open to all delegations and guests</i></p> <p>19:00    Cocktails/drinks</p> <p>19:30 - 21:30    Dinner</p>

## DAY 2, WEDNESDAY 28 SEPTEMBER 2016

### PARALLEL ROUNDTABLES 1 AND 2

#### Room A

#### RTD-1: Sustainable energy access: a critical factor for human development

*Open to delegates only*

09:00 - 09:05 **Opening remarks by the Chair H.E. Prof Sospeter Muhongo, Minister of Energy and Minerals, Tanzania (tbc)**

09:05 - 09:15 Introductory remarks by the Moderator HE Prof. Sadek Boussena, Former Algerian Minister for energy and mines and former President of the OPEC Conference

09:15 - 09:55 Presentation by African Union, ECREEE, SE4ALL and OFID

09:55 - 10:25 Discussion

10:25 - 10:30 Closing remarks by the Chair

#### Room B

#### RTD-2: Enhancing energy security: the role of technology

*Open to delegates only*

09:00 - 09:05 **Opening remarks by the Chair (Indonesia)**

09:05 - 09:15 Introductory remarks by the Moderator HE Dr Kamel Bennaceur, Former Tunisian Minister of Industry, Energy and Mines and currently the Director of Sustainable Energy Policy and Technology at the IEA

09:15 - 09:25 Presentation by the World Bank and Switzerland

09:25 - 10:25 Discussion

10:25 - 10:30 Closing remarks by the Chair

### BILATERAL MEETING, NETWORKING AND COFFEE BREAK

*Hallways and reserved bilateral rooms*

09:00 - 10:30

10:30 - 11:00

11:00 - 12.30	<p><b>PLENARY SESSION 4</b>  <b>Energy governance: global energy dialogue revisited</b></p> <p><i>Plenary room / Open to delegates only</i></p> <p>11:00 - 11:05      <b>Chair's opening remarks by HRH Prince Abdulaziz Bin Salman Al-Saud, Vice Minister for Energy, Industry and Mineral Resources, Saudi Arabia.</b></p> <p>11:05 - 11:10      Panelist's presentation / speech</p> <ul style="list-style-type: none"> <li>• HE Dr Sun Xiansheng, Secretary General, IEF</li> </ul> <p>11:10 - 11:35      Discussants' comments</p> <ul style="list-style-type: none"> <li>• HE Emmanuel Ibe Kachikwu, Minister of Petroleum Resources, Nigeria</li> <li>• HE Kapil Dev Tripathi, Secretary, Ministry of Petroleum and Natural Gas, India</li> <li>• HE Dr Aldo Flores-Quiroga, Deputy Secretary for Hydrocarbons, Ministry of Energy, Mexico</li> <li>• Senior Official from the Ministry of Foreign Affairs of Japan</li> </ul> <p>11:35 - 11:40      Interactive survey</p> <p>11:40 - 12:30      Debate and Q&amp;A</p>
12.30 - 13.00	<p><b>PLENARY SESSION 5</b>  <b>Concluding statement and closing of the Ministerial</b></p> <p><i>Plenary Room / Open to all delegations, guests and the press</i></p> <p>Concluding statement by the Minister of Energy of Algeria</p> <p>Announcement of Host and co-host countries for IEF16</p>
13:00 - 13:30	<p><b>PRESS CONFERENCE</b></p> <p><i>Press Room / Open to all delegations, guests and the press</i></p> <p>13:00 – 13:10      Introductory remarks by the Minister of Energy of Algeria and the IEF Secretary General</p>
13:30 - 14:30	<p><b>FAREWELL LUNCH</b></p> <p><i>Buffet, CIC</i></p>

SPOUSE PROGRAMME AND POST-CONFERENCE VISITS

Tuesday, 27 September 10:00 - 17:00	SPOUSE & ACCOMPANYING PERSONS
Wednesday, 28 September 14:00 - 18:00	POST-CONFERENCE VISIT



Tuesday: The ancient city of Tipaza on Algiers West coast



Wednesday: Martyrs' Monument

## Plenary Session 1.

### Oil markets: outlook and the stability challenge

Oil prices have sharply declined in the last two years and became a major concern for world energy players. Oversupply, weaker than expected demand, high inventories, a drastic drop in investments, and slower global economic growth are leading to more uncertainty and less predictability with regard to oil markets outlook, for producers, consumers and the industry alike. The challenge is to set up a sustainable stability in the international oil market for the benefit of all.

Since IEF 14 (Moscow, May 2014), oil prices have more than halved, resulting in a significant decline in exporting countries' revenues, a sharp contraction of investment and extended layoffs in the oil industry.

The downward pressure on prices was to a large extent the result of oversupply, despite production declines or shut-ins in some countries. Unconventional oil supply, which has witnessed a sharp accelerating growth since 2010, peaked in the middle of last year. The positive impact of low oil prices on oil demand was only short-lived, with growth reverting back to long-term trends, while some countries have reduced subsidies to, or raised taxes on oil consumption. Crude and products stocks remain at record levels. As in the past, the complex interaction between physical and financial markets is the subject of renewed attention, as to its potential role in exacerbating price movements. A slow rebalancing of markets seems to have begun, but large uncertainties remain stemming from a weak macroeconomic environment, unconventional oil supply price elasticity, and ability of producers to reach consensual solutions in supporting market stability.

The current low oil price environment has implications over the medium-term outlook. Clearly, the sharp cuts in investments and massive layoffs raise the question of the ability of the industry to satisfy demand in the future. Sustained low oil prices sow the seeds of much higher prices in the future; they are thus detrimental to both producers and consumers. Restructuring and downsizing is happening in the industry. In addition, financial markets have even more influence as unconventional oil producers are highly dependent on credit and hedging in their operations.

Oil will continue to satisfy growing energy needs over the medium- to long-term. But uncertainties over oil supply and demand outlook are significant, stemming from population growth, economic expansion, technology development, competition from other energy sources, policies, and geopolitics.

Today, the international oil scene faces a dual challenge, namely to restore market balance in the short-term at price levels that are sustainable and acceptable, and to ensure satisfying demand over the medium to long-term in a manner that is mutually beneficial to producing and consuming countries, and the industry as well.

## **Objective:**

Ministers and participants are invited to discuss recent developments in oil markets, as well as the medium- to long-term outlook, and provide guidance on ways and means to respond to the stability and sustainability challenge.

## **Some Key Questions:**

1. What are the impacts of the current oil price environment on producers, consumers, the industry, and the world economy at large?
2. Is this environment sustainable?
3. How have the interactions between financial markets and physical markets evolved? Are there new actors and what is their influence?
4. Investment is the link between the present and the future. What are the consequences of the last two-year sharp declines in investment?
5. How is the industry adapting to the new environment?
6. Global spare capacity is low. What are the risks?
7. What is the demand and supply oil outlook over the medium- to long-term? What is the impact of technology and policy?
8. What is the role of international cooperation and energy dialogue in fostering stability and sustainability of the oil market, among producers as well as between producers, consumers and the industry? How could the role of the IEF be strengthened in this regard?

## Plenary Session 2.

### Natural gas: challenges for the industry, the LNG chain, and implications for market structure.

The role of natural gas is expected to expand in satisfying world energy needs, given its availability, affordability, versatility, environmentally-friendly credentials both in terms of air quality and low emissions, and ability to partner with renewables. However, in recent years, the natural gas industry has entered a period of uncertainty, characterized by expanding global supply capacity, in particular of liquefied natural gas (LNG), weaker demand growth, sharp decline in prices, malfunctioning power and carbon markets in some regions, as well as changes in policy, business models and price formation mechanisms.

The natural gas scene is different to that of a few years ago, when high demand growth prospects and prices spurred investments in every segment of the natural gas supply chain. Natural gas was seen by many on the verge of entering a golden age.

The shale gas revolution turned the US from a potentially gas importing country into an exporter. Global natural gas liquefaction capacity has expanded and will continue in the medium to long-term, as additional plants come on stream and the large discoveries in new regions are developed.

Natural gas demand continues to grow, but at a slower pace, on the back of weaker economic expansion, the gradual shift to less energy-intensive sectors, improvements in energy efficiency, as well as competition from highly-subsidized alternative energies in the power sector. The demand center continues to gradually shift to Asia. Natural gas penetration of the transport sector, notably the maritime transport, remains at an early stage and its prospects are rather blurred.

Natural gas prices have trended sharply lower, due to the imbalance between supply and demand and the effect of declining oil prices. This price environment led to adverse impacts on gas exporting countries' revenues, and on the capital-intensive natural gas industry. It has also triggered further debate on the coexistence between long-term oil-linked contracts and short-term hub-priced transactions.

In the context of the COP21 landmark agreement, natural gas could play an important role in the global effort to combat and adapt to climate change, while contributing to satisfy growing world energy needs, as it is the least greenhouse gas emitting fossil fuel. Moreover, thanks to its ability and cost-effectiveness in backing up intermittent power sources, as well as its versatility both in terms of scale and use, it is seen by many as the perfect transition fuel.

**Objective:**

Ministers and participants are invited to discuss recent developments in natural gas markets and their implications, as well as the medium- to long-term natural gas outlook, and to exchange views on ways and means to promote natural gas as a transition fuel to respond to growing world energy needs while protecting the environment.

**Some key questions:**

1. What is the short- to long-term natural gas outlook? What are the opportunities? What are the challenges?
2. Are recent developments in gas markets cyclical or structural? What are the impacts of low prices, in particular on investment? What is the role of LNG in this context?
3. How will natural gas price formation evolve in the future? Which role for oil-based pricing mechanisms? Which role for hubs?
4. How can the use of natural gas be enhanced as a fuel of choice to meet world energy growing needs in a sustainable manner?
5. How can the dialogue between both the producers and consumers be enhanced and how can it contribute to expanding the role of gas?

### Plenary Session 3.

#### Renewables and energy efficiency: prospects and challenges after COP 21

On the occasion of the 21st session of the Conference of Parties to the United Nations Framework Convention on Climate Change (COP 21), all countries reached consensus on a landmark agreement to combat and adapt to climate change, namely the Paris Agreement. Its main objective is to reduce the risks and impacts of climate change by, inter alia, holding the increase in the global average temperature to well below 2°C above pre-industrial levels.

Mitigation and adaptation encompass a diversity of nationally determined contributions. Renewables and energy efficiency are often considered as constituting a low-hanging fruit in this regard. Indeed, the majority of the contributions submitted to the UNFCCC emphasizes the potential development of renewables and energy efficiency and underline the need to mobilize investment, develop institutional, technical and human capacity, and enhance regional and international cooperation.

Many initiatives have been launched to promote and scale up renewable energy and energy efficiency and send a clear signal to investors to this end. Moreover, the Paris Agreement provisions on finance, technology transfer and capacity building, should help, if well implemented, developing countries in their mitigation and adaptation efforts, including the expansion of renewables and the deployment of energy efficiency.

The cost of electricity generated from renewables, notably wind and solar photovoltaic, has dramatically declined, thanks to policy support and technological progress. In 2015, and for the first time, new installed renewable capacity surpassed additional conventional capacity from coal, gas and nuclear power combined. Renewable electricity seems less difficult to integrate into the grid than suggested in previous assessments. But constraints still exist in terms of managing intermittency, designing adequate rules for power markets and supporting hefty subsidies.

## Objective:

Ministers and participants are invited to discuss the prospects of renewable energy and energy efficiency, notably in connection with the Paris Agreement, address the potential barriers to, and unintended consequences of large scale renewables deployment, and explore ways and means to help in technology transfer and capacity building to developing countries.

## Some key questions:

1. How can renewables and energy efficiency be developed at a large scale? What are the barriers? What are the risks?
2. What lessons could be drawn from current deployment of renewables? Is there a leading technology? How should power markets be designed to ensure security of supply in terms of managing intermittency, and avoiding potential consequences, such as the closure of natural gas power plants?
3. What are the global and local key drivers to make energy efficiency an attractive asset for investors?
4. What lessons could be drawn from carbon pricing experiences in promoting renewable energy and energy efficiency?
5. How could the Paris Agreement provisions on finance, technology transfer and capacity building, contribute to the large deployment of renewable energy and energy efficiency in developing countries?

## Plenary Session 4.

### Energy governance: global energy dialogue revisited

The 25th anniversary of the global energy dialogue is an opportunity for ministers and IEF15 participants to look back at past accomplishments and discuss ways and means to further strengthen it. Since the first meeting in 1991, the open and informal dialogue has evolved with some important milestones, such as the decision in 2000 to establish a permanent Secretariat, the launching in 2002 of the Joint Oil Data Initiative, and the signing of the IEF Charter in 2011.

Given the big challenges that the international energy scene has experienced recently such as market turbulence, climate change concerns and renewed focus on sustainable energy access, interest in the global energy dialogue has become strong and rising as all parties strive to better understand the complexities of the evolving energy scene. There is a greater awareness of the common challenges facing energy producing, consuming and transit countries, as well as the industry.

Recently, the high-level dialogue fostered by the IEF has helped to sharpen focus on energy market outlooks and the interaction between the physical and financial markets, as well as on oil and gas price volatility. Oil and gas market data transparency is also a key interest in regard to addressing unwarranted price volatility and is well supported by the IEF's work with its partners (APEC, EUROSTAT, GECF, IEA, OLADE, OPEC, UNSD) in the Joint Organizations Data Initiative (JODI). Moreover, the IEF, working with its member countries, is engaged more directly with growing sustainability concerns especially as they relate to the promotion of energy efficiency, notably within the framework of the G20. However, challenges remain, not the least being the predictability and sustainability of financial resources in support of the IEF Secretariat work.

#### Objective:

Ministers and participants are invited to take stock of the past quarter-century open and informal energy dialogue, and discuss ways and means to strengthen it in view of today's and future energy challenges.

#### Some key questions:

1. What lessons could be drawn from the past quarter-century dialogue?
2. What are the opportunities and challenges for enhancing international energy dialogue and cooperation?
3. How to improve the industry involvement in energy dialogue?
4. How to improve the interaction of the IEF with other international energy institutions?
5. Should JODI be expanded to include other energies, such as coal?
6. How to ensure the financial predictability and sustainability of the IEF Secretariat?

## **Roundtable 1.**

### **Sustainable energy access: a critical factor for human development**

Around one in five people in the world lacks access to electricity and three billion people still rely on biomass for basic daily activities. This situation may persist or even deteriorate with growing global population and expanding energy needs, unless strong actions are taken, including through international cooperation.

At the United Nations Summit in September 2015, the Member States adopted unanimously the 2030 Agenda for Sustainable Development and agreed on a set of Sustainable development goals (SDGs), which include specifically energy access. In addition, the cross-cutting nature of energy makes it critical for implementing other SDGs such as those related to health, food security, water access, poverty eradication and education. More specifically, “Goal 7” highlights targets to ensure access to affordable, reliable, sustainable and modern energy for all by 2030. To this end, an important enabler identified is to “enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology”.

As Energy access has become a priority, the Sustainable Energy for All (SE4ALL) initiative has been launched to further this objective, while international financial and aid institutions, such as the World Bank and the OPEC fund for international development (OFID) have expanded their activities to improve living standards through facilitating energy access.

#### **Objective:**

Ministers and participants are invited to share lessons and experiences on improving energy access and to discuss ways and means to improve international cooperation and promote investment in this regard.

#### **Some key questions:**

1. What are the barriers and the enablers in implementing the objective of sustainable energy access?
2. What lessons could be drawn from past experiences?
3. How to harmonize the roles and actions of governments, the industry, the private sector, financial institutions, and the academia?
4. How can international cooperation improve foster energy access for all? Is there a role for the IEF?

## Roundtable 2.

### Enhancing energy security: the role of technology

Technology has played an important role in shaping the global energy scene, affecting both supply and demand. It helped contribute to satisfying growing world energy needs, stemming from expanding population, economic development and social progress. It is also an important means in responding to the need of protecting the environment, both locally and globally.

The role of technology has been demonstrated once again with recent advances in unconventional hydrocarbon related technologies, that helped unlock significant volumes of fossil resources that were not deemed to be recoverable two decades ago. Technology, together with policy support, has also played a major role in the recent rapid deployment of renewable energy, notably onshore wind and solar photovoltaic, and its significant unit cost reduction. Advances in energy efficiency are also accelerating, in particular in the transport sector.

The ambitious Paris Agreement objective of limiting global temperature increase well below 2 degrees Celsius above pre-industrial levels requires a much bigger role for, inter alia, cleaner fossil fuel technologies, renewables and energy efficiency, while energy access and security are enhanced. In addition, technology transfer to developing countries and capacity building are two key components of the Paris Agreement that could help in achieving its objectives.

Many challenges lie ahead, including the integration of intermittent energy sources, demand side management, carbon capture, utilization and storage, more efficient transport systems...

#### Objective:

Ministers and participants are invited to discuss ways and means to promote innovation and ensure accelerated development, deployment and transfer of technology at rates significantly higher than historical ones. This includes exchanging views on the role of government, public and private sectors, financial and international institutions, as well as the academia.

#### Some key questions:

1. What roles should governments and industry play to promote, deploy and transfer cleaner energy technologies?
2. How can the existing mechanisms (international collaboration, public/private) be improved to meet the challenges set by the Paris Agreement?
3. What are the technologies most likely to be the focus of innovation?
4. Should energy targets or specific technologies be the focus of government policy, or should the latter be technology-neutral?
5. How can the transfer of cleaner technologies to developing countries be accelerated?

