A much changed landscape....

- A co-ordinated energy policy framework

- Supply side
  - Resurgence of *oil and gas production* where output had previously been assumed to be in decline
  - Growth in *unconventional gas production* has been a game-changing development in North American markets & beyond

- Demand side
  - Strong *energy efficiency* measures, most notably in *transport*, are set to curb fossil fuel consumption
  - Emissions *regulations* for new and existing *power plants*

- Far-reaching consequences for energy markets, economic competitiveness, geopolitics and the global economy
Domestic production of all petroleum liquids was 11.7% higher in 2013 v 2012; 30% higher than in 2003

* Source: IEA analysis, 2014
Towards a cleaner energy sector

- **Increased engagement and leadership opportunities:**
  - US-China Joint Announcement on Climate Change and Clean Energy Cooperation
  - Lima COP 20 and Paris COP 21

- **Climate Action Plan** of June 2013: EPA called on to **develop regulations to control CO₂ emissions from power plants.**

- **Clean Power Plan** of June 2014:
  - State-specific, rate-based goals for CO₂ emissions from the power sector and guidelines for states to follow
  - This rule, to be in place by 30 June 2016, builds on existing measures to reduce CO₂ emissions

- The confluence of market and regulatory pressures is likely to result in a gradual evolution towards cleaner electricity generation in the US
Strong progress on Energy Efficiency and RES

- Strong improvement in **energy intensity**
- **USD 12 billion investment** in EE programmes:
  - **Weatherization** of over 1 million low-income homes to improve the energy efficiency of less well-off families
  - New regulations for the transport sector
- A goal to **double renewable production** from wind, geothermal and solar sources by 2020
- State-level **RPS policies are a significant driver** and have largely held up against recent political challenges
- Durability of **federal tax incentives and RFS** remains a persistent uncertainty
New fuel economy standards

Projected savings of 6.3 billion barrels of oil, equivalent to almost one-half of US oil imports in 2012

* Source: ICCT, 2013.
Leading the way on RD&D, CCS

The federal government is the largest funding entity for energy technology research, development and demonstration in the IEA

* Source: IEA analysis, 2014
Electricity markets and resiliency

**Integrating markets beyond state borders**
- Benefits of RTOs and ISOs: efficient use of existing assets, minimisation of electricity costs
- Elsewhere, the system remains fragmented, with less efficient use of existing assets
- Trade of electricity across the borders of utilities remains difficult: need a balance between consolidation of system operators and co-ordination between systems

**Building a 21st century power system**
- Climate: System resiliency, especially in response to weather-related reliability events, has become a priority
- Cybersecurity: New threats have emerged, technology contains vulnerabilities that may be exploited
- Industry, in collaboration with DOE, must continue to advance cybersecurity and resilience capabilities
Investing in the electricity system

- Improve consistency between the operation of the gas pipeline system and the power transmission system
- Cost-effective policies for planning and siting, cost allocation and cost recovery
- Deployment of renewables; managing variability will require access to balancing and flexibility resources over wider geographic areas
- Build smarter grids, offer consumers choice, greater demand participation
- Maintain diversity of power supply: the future of nuclear, clean coal
IEA key recommendations

- **Complete the process leading to the Quadrennial Energy Review (QER) and utilise its outcomes to re-establish a stable and co-ordinated strategic outlook for the energy sector**

- **Maintain its path towards a secure sustainable energy system by:**
  - Supporting the development and implementation of demand-side measures and energy efficiency policies with an emphasis on the transportation and buildings sectors
  - Offer greater durability and predictability of fiscal incentives for renewable energy in order to maintain investor confidence
  - Consistent and predictable regulatory frameworks for CCS
IEA key recommendations

- **Enhance the long-term sustainability of the electricity sector by:**
  - Developing effective, co-ordinated, national policies to reduce the uncertainties which impede investments in secure electricity infrastructure including transmission, distribution, smart grids, renewable energy integration and climate resilience
  - Introducing measures to deliver greater co-ordination between different grid operators in order to facilitate the integration of greater shares of variable renewables and optimise regional transmission investments
  - Articulating a clear strategy for the future diversity of the power sector including a statement of how the federal government will provide long-term support for nuclear power