# Global Electricity Initiative

## 2014 Report – Executive Summary

## Why GEI?

The Global Electricity Initiative (GEI) is a partnership established in 2012 between three of the world's largest energy and sustainability networks: the World Energy Council (WEC), the World Business Council for Sustainable Development (WBCSD) and the Global Sustainable Electricity Partnership (GSEP). The main objective of this initiative is to encourage action and cooperation between electricity utilities around the world to achieve access to electricity for all people by 2030 in a reliable, affordable and sustainable way.

GEI aims to build an international community of electricity industry leaders. It also conducts regular surveys to facilitate the action utilities are taking to increase access to affordable and clean electricity by identifying, recording and sharing information, main trends and issues as well as best practices. Moreover, GEI conveys the messages of the sector leaders to the policymakers and provides input into other WEC activities, including the Energy Trilemma.

## Survey results

The most recent survey of electricity utilities around the world, conducted in 2014, covered countries that together account for **over 80% of global installed generation capacity.** The 2014 survey concluded that:

- based on current trends under a 'business as usual' scenario, universal access to electricity will not be achieved by the target date. At the same time, the survey suggests that it is still possible to achieve the target by 2030 if, and only if, governments, industry and the international community undertake an immediate concerted action and adopt a different approach and a new business model
- the world will continue to rely on fossil fuels for power generation for many years. Nevertheless, utilities are developing new, renewable carbon-free technologies. For the large-scale deployment of these solutions, the introduction of advanced new technologies such as energy storage, smart grids or carbon capture and storage (CCS), need to be accelerated and, in certain cases, regulatory barriers should be removed
- utilities are often exposed to contradictory expectations from governments, industry, consumers and other stakeholders. As the electricity sector is still a regulated industry, clear and consistent messages and directions from the regulator are required
- for utilities security of supply is the first priority
- climate change is a reality and the focus should now be placed on adaptation as much as mitigation
- long-term thinking, commitment and a realistic carbon price are required to redirect investment
- the energy-water nexus and competition for land are becoming major issues.

# Main Findings ...

**All** GEI utilities point out that ... **adaptation to current and future climate change is as important as mitigation** measures to avoid further climate change.

However, investments in adaptation research and development need to increase.

**97%** of GEI utilities agree that ... **consumers are not willing to pay higher prices for non-carbon electricity** than for fossil fuel based electricity.

**96%** of GEI utilities indicate that ... **energy storage technologies are a crucial success factor,** especially for growing share of renewable energy sources.

**94%** of GEI utilities report that ... **security of supply is the priority implementation focus area**

**78%** of GEI utilities state that ... **land requirement is becoming a major issue.** This could affect the development of new power generation projects and infrastructure.

**81%** of GEI utilities indicate that ... **there is a regulatory requirement for energy efficiency in most countries** of operation.

In many countries, due to the economic climate and upward cost pressures from government policies to lower carbon emissions, utilities could have **difficulties to cope with further reduction in sales and loss of revenues resulting from energy efficiency policies.**

**73%** of GEI utilities believe that ... **smart grids/smart meters are key for** smoothing the **integration of renewables.**

**62%** of GEI utilities are ... **facing a challenge of integrating intermittent renewables into their electricity systems.**

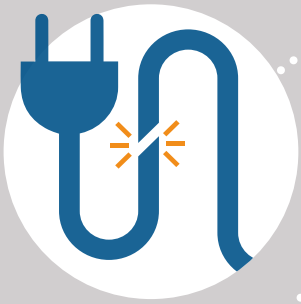
However, there have also been a few success stories in Europe, North America and Asia.

**61%** of GEI utilities indicate that ... **water requirements will increasingly be a challenge.** GEI utilities are working with key stakeholders and conducting water conservation initiatives to address this challenge.

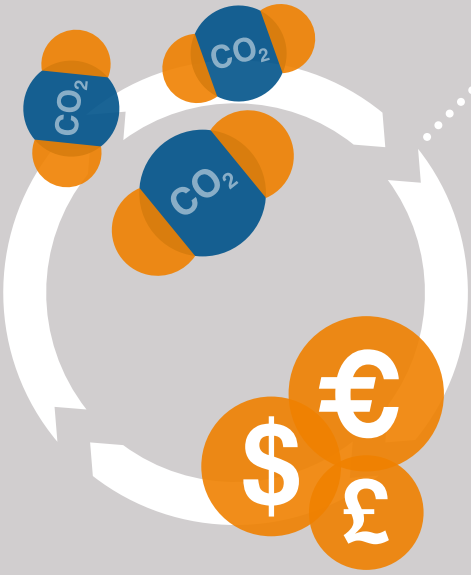
**44%** of GEI utilities are ... **evaluating the feasibility of Carbon Capture and Storage but do not consider it commercially viable** at present.

# ... and Key Messages

**Renewables are** expected to have a **growing** share in the fuel mix as a means of reducing carbon emissions and complementing the provision of electricity from traditional energy sources. However, the **fuel mix** of the GEI utilities between 2015 and 2035 will still be **dominated by fossil fuels**, primarily coal and natural gas.



Despite their ongoing efforts to increase electrification rates, GEI utilities think that **universal access** to electricity in Africa and Asia is **unlikely** to be achieved **by** the target date of **2030 under the business as usual scenario.**




GEI utilities indicate that the **carbon market** based mechanisms carry a **lot of uncertainties**. These uncertainties could slow the pace of the future development of renewable energies and energy transition in those countries that mostly use market based mechanisms. The GEI utilities operating in the countries which have introduced some sort of a carbon price, report that $CO_2$ prices that would lead them to change their technology portfolio mix and investment vary project by project. Some utilities indicate that the projected **$CO_2$ price** would need to **increase considerably** to bring about a significant shift in utility **investment and portfolio decisions**. Other factors than $CO_2$ relating to energy security and affordability also need to be taken into account.


It appears that all GEI utilities are exposed to numerous **contradictory priorities** and signals from various stakeholder groups who expect the utilities to address their expectations simultaneously. Today, GEI utilities' activities are largely regulated, including their mitigation activities. This has a negative impact on the investment decisions as the regulations often limit availability of technology choices the utilities can invest in.

# How utilities can use GEI

These challenges have to be addressed globally and by all stakeholders. GEI provides the right platform where utilities from all over the world can exchange best practice cases and learn from each other. Electricity utility leaders can use GEI to share their visions and ideas with their peers and policymakers. By bringing together utilities from all around the world, GEI facilitates cooperation between utilities from countries representing different levels of economic development and helps identify new business opportunities.

## Acting now

To reach universal access to electricity in an efficient, effective and straightforward way, the GEI utilities stress that governments must create an enabling operating environment for the industry that will support the necessary transformation of the sector. This should include:

- transparent legal and regulatory frameworks and sustained and effective policies and regulations to facilitate long-term planning and investment, including development and demonstration of new technologies
- policies promoting price signals to reflect real costs and, when necessary, time-limited and strictly targeted subsidies.

## GEI utilities – working together to transform the electricity sector

GEI utilities are already working on various new and fundamental issues such as electricity storage, smart grids and on the entire power system efficiency. They will be playing an important role in transforming the electricity sector. GEI utilities consider these technologies as crucial success factors, especially for integration of a growing share of intermittent renewable energy sources. Existing pump storage hydropower plants, for example, have been in use for many years. In this context, smart grids are important for the integration of intermittent renewables as well as the interconnection of transmission grids. Furthermore, GEI utilities are looking into the feasibility of CCS and have pilot projects in place. However, they do not consider CCS commercially viable at present, as there is no realistic price for $CO_2$. In terms of energy efficiency, GEI utilities, together with their customers, are developing and implementing demand side management (DSM) projects. Moreover, GEI is committed to supporting the achievement of the 2030 goals set by the UN Sustainable Energy for All initiative by mobilising the global community of utility leaders and bringing together the key stakeholders to collaborate on joint initiatives and projects. All of these activities could be strengthened, streamlined and accelerated, provided the right conditions are set by the legislator.

In all of these areas and more, the 2014 GEI report provides best practice examples, which have been implemented successfully. In addition to this, the GEI report also offers an opportunity for the industry leaders to share their visions of the sector.

## Be a part of the global solution

GEI encourages governments and global electricity industry leaders to join forces and help spread a sense of urgency and the need for immediate action. GEI utilities and their leaders call for a deeper and stronger dialogue and information exchange with government bodies and other stakeholders. By providing the global knowledge-sharing platform, GEI is inviting all stakeholders to join the global electricity community.

Global Sustainable Electricity Partnership

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WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ÉNERGIE
*For sustainable energy.*

Project Partner: Deloitte Africa, Southern Africa Office

**Find the GEI report and more at**

www.globalelectricityinitiative.org

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