Sector shake-up in Mexico
Over 75 years of nationalization come to an end with unbundling.

Germany shifts gears on funding renewables
Many countries face a similar challenge: how do you fund renewables and who pays?

Investors get the jitters
Australia is the latest example of how legislative risk can affect tax policy.
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Introduction

By Ginny Norton

Our sector is undergoing a transformation that is affecting everything from how energy is produced and who generates it to how it is bought, sold and distributed.

As a result, the tax landscape must change—and it is. Tax can be a key factor in transformational change, influencing where, when, how and what investments are made. Forward-thinking power and utilities (P&U) businesses are realigning investment priorities, rethinking business models, and exploring new commercial strategies and value-added service offerings to retain and grow their customer base. And EY is helping them make these changes.

We see a number of drivers behind this transformation, all affecting utilities in different ways in different markets. This includes the huge scale of infrastructure renewal and expansion needed (at an estimated US$71t to update and build global power infrastructure through 20351), the falling price of many renewable energy technologies and the push toward distributed generation, and market reforms and regulatory change.

“Tax can be a key factor in transformational change, influencing where, when, how and what investments are made.”

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We explore some of these developments in this issue of Plug in. Take Mexico, for example, which is shaking up its energy sector: after more than 70 years of nationalization, the oil and gas and electricity sectors are opening fully to the private sector and being unbundled. In his article “Energy reform in Mexico,” Alfredo Alvarez Laparte explains, “We have all the regulations but still do not know what the rules of the market will be.” The reforms also include the introduction of a carbon tax, support for clean energy and a wholesale electricity market.

Government policy on renewables is under intense scrutiny in many countries, driven by the multilayered question: how should renewable energy be supported and who pays for it? Germany, which has installed 37GW of renewable energy in the last five years as it shifts away from fossil fuel and nuclear power generation, is a country many are watching with interest. Christian Hampel, head of the German Energy Law practice, explains in his article “Germany waves good-bye to feed-in-tariffs” how the country will replace subsidies for renewables with an auction process for newly installed renewable energy facilities from 2017. This should, in principle, result in prices set competitively rather than by the government.

Australia is taking another route. The country’s Renewable Energy Target (RET) program was essentially a wealth transfer mechanism to make renewable generation competitive. With a change of government came concerns about the costs of the program. As Paul Laxon, a partner in Queensland Transaction Tax, explores in his article “Australia’s renewables review gives investors the jitters,” both fossil fuels and the renewables sectors are subsidized. The underlying question that governments must consider is what policies are most desirable from a social and economic perspective; once that is agreed, tax policy can be formulated accordingly.

Another driver of transformation in P&U is the onset of big data and analytics. Global revenue from smart grid technologies is expected to more than double from US$33b in 2012 to US$73b by 2020. Grid analytics, in other words making sense of the vast amounts of data from smart meters, can be used to improve processes and business intelligence—but only if the data can be turned into meaningful information.

In many countries, research and development (R&D) incentives are in place to support investment in the innovation of smart grid and smart meter technologies. In “Getting European R&D market-ready,” Frank Burkert, leader of the Global Research and Development and Innovation Services tax center in Europe, discusses the non-repayable cash grants available to European P&U companies for R&D. With a focus on funding large-scale demonstrations and bringing ideas to market, these grants are too valuable to pass up in an industry that is crying out for innovation.

In the midst of all this change, utilities are still charged with the duty of maintaining the current, existing infrastructure. In “Tangible Property Regulations (TPR): finality at last,” Susan Grais, Business Tax Advisory Executive Director, gives her view on the final regulations, indicating that while the objective of clarity has been met, the added compliance effort is significant.

To succeed in these challenging times, utilities need to embrace a culture of innovation and entrepreneurship and be willing to adopt the best ideas—wherever they come from. Sometimes a change of perspective is needed in order to ask the right questions.

EY is helping P&U companies navigate transformational change by raising the right questions and providing tax services that support effective strategy development, market design, regulatory experience and implementation. Hopefully these articles will give you a flavor of the work that we are doing to help utilities meet the challenges of transformation.

We look forward to hearing from you.

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Mexico is liberalizing its energy sector and opening fully to foreign investment for the first time in 75 years. What will it mean for the electricity sector — and what are the tax implications?

Alfredo Alvarez Laparte reports

Mexico’s sweeping energy reform secondary legislation was signed into law by President Peña Nieto in August 2014. This legislative overhaul will open up the electricity and oil and gas sectors to competition (see inset box: What’s changing?). According to the Bank of America, reforms could generate an additional US$20b of foreign direct investment as early as 2015, strengthen the peso and boost economic growth.3

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Above all, Mexicans hope that electricity prices will fall: current prices can run as high as 75% more (though the Government subsidizes low-income residential customers) than its neighbor, the US. This has created a significant disadvantage for energy-intensive industries, such as manufacturing, in Mexico.

What’s changing?
For the electricity sector, the three most significant changes from this radical reform are:

1. **Unbundling** of the Mexican monopoly in electricity: in the past, government-owned Comisión Federal de Electricidad (CFE) served the vast majority Mexico’s electrical needs, with independent producers providing up to 25% of generation capacity (all output sold and commercialized by CFE). Unbundling will fully open up generation and retail for investment by the private sector. Co-investment will also be possible with the Government in transmission and distribution (T&D).

2. **Creation of a wholesale electricity market**: a competitive market for power is needed to support economic growth and to make the reform’s long-term aims sustainable. The wholesale market, covering the country’s entire generation capacity, could be up and running at the end of 2015, with further functionality added in 2016.

3. **More clean energy**: in 2011, renewables accounted for 18% of Mexico’s generation mix (see Figure 1); however, most of it came from hydro power plants. The Government has set a target of 35% from clean energy by 2024, including effective co-generation with natural gas and hydro power generation.
The Government is trying to simplify the tax system, close loopholes and make tax collection more efficient. This will help to boost Mexico’s tax take: in 2013, it had the lowest tax revenues of the 34-nation Organisation for Economic Co-operation and Development (OECD) due to a narrow tax base and rampant evasion.4

CFE was incorporated in the regular tax system as of 1 January 2015, and is now subject to income tax like any other Mexican company. This is a significant change for the institution, as it used to be fully tax-exempt.

Companies investing in generation and retail will no longer qualify for a waiver on thin capitalization. New generators must evaluate the opportunities carefully and lock in contracts to ensure they have enough business to warrant the investment.

Figure 1. Energy consumption in Mexico (2012)

Source: U.S. Energy Information Administration.

Companies investing in generation and retail will no longer qualify for a waiver on thin capitalization. New generators must evaluate the opportunities carefully and lock in contracts to ensure they have enough business to warrant the investment.

Figure 1. Energy consumption in Mexico (2012)

Source: U.S. Energy Information Administration.

Tax implications: thin capitalization, clean energy certificates, carbon tax

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Companies investing in generation and retail will no longer qualify for a waiver on thin capitalization. Independent power producers (IPPs) used to qualify for a waiver because they were investing in a strategic sector. From 2014, only T&D companies will qualify for the waiver as the secondary legislation redefined the strategic sector with no transition period. Given that the applicable debt to capital ratio is 3:1,5 it will be hard to justify subordinated debt on top of regular project finance.

As a result of their increased tax burden, companies will need deeper pockets to invest in generation in Mexico. Although large companies such as Iberdrola (Mexico’s biggest IPP, with over 5MW of capacity) may be happy to loan those funds, mid-sized and smaller companies

4. Krista Hughes, “Mexico aims to overhaul tax system, raise revenue”, Reuters, 6 May 2013. Available at www.reuters.com/article/2013/05/06/us-mexico-tax-idUSBRE9450A520130506
5. Counting all debt that generates interest, including project finance.
Mexico’s wind energy capacity

may decide not to enter generation or retail. New generators must evaluate the opportunities carefully and lock in contracts to ensure they have enough business to warrant the investment. They will also have to manage all the risk of natural gas or other power sources, because the CFE will no longer act as an intermediary and power producers will have to manage their own go-to-market effort.

Another issue with significant tax implications is support for renewables. Mexico has huge renewables potential: although only 18% of electricity generation was from renewables (mainly hydropower) in 2011, investment in solar and wind projects has ramped up in recent years due to incentives granted before the energy reform.

The reforms are likely to prompt a shift from the self-supply mechanism to power purchase agreements (PPAs) negotiated either bilaterally or through the wholesale market. Under the previous self-supply system, developers were subsidized by cheap T&D costs and the so-called Bank of Energy. This is being replaced by clean energy certificates that will be traded in the market. However, until the price at which these certificates trade is certain, banks are likely to be unwilling to grant loans to clean energy projects. All existing renewable projects will be allowed to keep the subsidy under a grandfather clause.

Reforms also include a carbon tax on fossil fuels, set at a fixed amount per type of fossil fuel, or US$3.50 per ton of carbon dioxide equivalent (tCO2e). It remains to be seen how the different policy instruments (cap-and-trade for energy, carbon tax and a potential voluntary trading system under the 2012 General Law on Climate Change) will evolve and work together.
Challenges: uncertainty over rules of the market, T&D losses

A key challenge will be including the electricity sector under tax legislation that was drafted before CFE was subject to corporate income tax and before electricity companies could act in the market independently of CFE.

Right now, we have all the regulations but still do not know what the rules of the market will be; of course, ad hoc regulations for tax-specific circumstances will be needed.

Many industry-specific issues, such as the high rate of losses in T&D lines, will need clarification on tax regulations. Mexico loses 15% of generated electricity through its T&D lines; the average for the OECD is 6%. It’s generally accepted that these losses are due to a lack of investment in the lines, as well as theft. The tax authority may expect generators to absorb the cost of lost electricity—in which case, electricity companies will need to claim a deduction, thus affecting their tax calculations, but under current regulations, such a deduction is unclear.

Utilities and investors are trying to understand exactly what the reforms will mean in practice and which parts of Mexico to invest in. We are working with clients on challenging, complex business cases. There’s also interest in joint ventures with CFE. Transmission is attractive due to its steady flow of income, but since it remains a strategic area, investors can only participate by partnering with CFE.

Working together to provide clarity

Mexico was the 15th largest economy in the world in 2013, according to the International Monetary Fund, and opening
up oil, gas and electricity markets after nearly 80 years of monopoly is no small task for the tax authorities. The sector, its advisors, regulators and tax authorities will need to work together to resolve issues.

Our clients have a lot of questions about how to finance and structure their businesses in light of these reforms. As the regulations evolve, we will seek to provide as much clarity as possible and to work closely with the authorities.

As the largest tax practice in the country, EY already has a knowledgeable P&U tax team in place and is investing in strengthening and expanding that team. We understand this reform regulation and how it works; clients are coming to us for our knowledge and experience.

The starting point is an expensive electricity industry, so imagine what that change could mean for Mexico: more affordable electricity across the country, as well as a more balanced system. Imagine what it could mean for our manufacturing industry. I believe that we are on the right path to transform Mexico’s energy and economic landscape.

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As it shifts away from fossil fuels toward renewables, Germany is a market that many countries are watching with interest. The latest reforms change the way renewables are supported, while still providing an attractive market for investors.

**Christian Hampel** reports

Germany’s decision to systematically increase the role of renewable energy in its generation mix was enshrined in the Renewable Energy Act (German: Erneuerbare-Energien-Gesetz, or EEG), which came into effect in 2000. Since then, the EEG has been amended multiple times, with the most recent changes taking effect in August 2014, largely in response to the rising costs of a renewables surcharge and challenges over competition from the European Commission.
After the Fukushima nuclear reactor accident in March 2011 and further political debate, the amended EEG further develops the “Energiewende” (energy turnaround) concept. The Energiewende is the central political element of one of the greatest paradigm shifts since the start of the industrial revolution: the shift from fossil fuel and nuclear power generation to renewable energy sources. The latest round of changes gets to the heart of the challenge many countries face on renewables: how do you fund it and who pays?

Changing how renewables are funded and who pays

The two most significant changes to the EEG are:

1. **Funding renewable energy:** under the German system, the renewable energy support scheme was and primarily remains based not on a reduced tax burden but on a system of subsidies. In essence, the grid operators paid a supplement to renewable energy generators, and the costs of this were passed on to end consumers via the so-called EEG Surcharge. In December 2013, the European Commission (EC) decided Germany’s whole support scheme for renewables qualified as “state aid” (despite an earlier decision in 2001 that concluded the opposite). In Summer 2014, the EC approved the amended EEG, which continues renewable energy support by reference to feed-in tariffs, but from 2017 replaces the tariffs with an auction process for newly installed renewable energy facilities. This means that, in principle, prices will be set competitively rather than by the Government. To transition to the new system, the Federal Network Agency will run a pilot tendering process for outdoor photovoltaic (PV) power installations from 2015 and incorporate lessons learned into the new system.

2. **Spreading the cost base:** the difference between remunerations paid out and revenues generated by renewable energy sources was designed to be covered by the EEG surcharge. The surcharge, which was set at €0.0624 per kilowatt hour (US$ .08/kWh) in 2014, was paid by end customers, but energy-intensive industries and railway operators received an exemption. The 2014 amendments are aimed at tightening who receives an exemption to spread the cost more evenly across electricity users.

Still an attractive renewables market

Changes in the German electricity market have attracted numerous new sector-specific niche players as well as multinational companies and financial investors. And though the detailed regulation (104 sections and 4 annexes) stipulated by the EEG seems daunting, the following factors will continue to make Germany an appealing market for investors:

- **Priority grid connection:** grid operators are legally obligated to connect renewable energy facilities to the grid and take off the electricity produced. Electricity generated from renewable energies is prioritized when it comes to feed it into the grid. If renewable and conventional energy sources compete for grid feed-in space, electricity from renewable energy sources enjoy strict priority. Conventional energy production facilities such as coal and gas power plants have the duty to immediately scale back feed-in in case of grid congestion situations.

- **Investment protection over 20 years:** operators of renewable energy facilities will continue to receive the EEG surcharge (technology-specific, guaranteed remuneration) for their electricity generation for a period of 20 years plus the year the facility is commissioned.

- **Stable regulatory environment:** Germany is not going to introduce a retroactive cut in feed-in tariffs, unlike other European markets such as Spain.

- **Predictable flow of income:** the EEG ensures that an investment decision is based on a predictable flow of income for many years. This enables investors to calculate expected revenues per year depending on the facility’s year of commissioning and its expected output units.

The German energy market has seen dramatic changes as a result of its shift toward renewables. The country installed 37GW of renewable energy from 2009 to 2014 (with scarcely any of this investment done by Germany’s Big Four energy companies), reaching 85GW in 2013. The renewables energy sector is no longer a niche player. In 2014, generation of electricity from renewables amounted to 27.3% of the overall electricity production in Germany, qualifying renewables as...
Germany’s Energiewende (energy turnaround)

The renewables energy sector is no longer a niche player: it represents 27.3% of electricity production in Germany. At midday 19 October 2014, renewables provided two-thirds of the country’s electricity, with a total capacity of 36GW.

The renewables energy sector is no longer a niche player: it represents 27.3% of electricity production in Germany. At midday 19 October 2014, renewables provided two-thirds of the country’s electricity, with a total capacity of 36GW.

What is the response within Germany to Energiewende? We are seeing utilities restructure their businesses: this year Vattenfall announced it will sell its German lignite power assets, and E.ON began its separation into two businesses: one focusing on renewables, distribution and customers, the other on conventional power generation and trading. Many large industrial customers and consumers are asking, “Is this the right course of action? Are we going too fast?” But overall, people still support the change, understand why it is so important and accept that it comes with a higher price tag.

Challenges to meet target of 80% renewables by 2050

A major challenge as the country moves toward its goal of 80% renewable energy by 2050 will be the necessary grid expansion. Decentralized renewable energy facilities must be integrated into existing grid structures that are still geared toward centralized production plants.

Given the unpredictable nature of wind and solar, electricity consumption needs to become more flexible in the future and/or conventional power plant reserve capacities need to be maintained. At the same time, the overall cost of electricity for end users must remain competitive. The change from statutory remuneration to an auction-based system may help to achieve this goal.

Another is the question of market design. Although renewables played a niche role in the past, that is no longer the case. The current market design is an energy-only one, where utilities are paid for energy supplied. But could we move to a capacity market,

Source: BMWI (Federal Ministry for Economic Affairs and Energy).
where we pay companies for capacity even if they don’t provide it? This is an idea being debated in Germany and across Europe.

As I see it, the other significant challenge is what business model utilities should adopt. What will be the new business model going forward? I think utilities need to shift from an asset orientation to a services orientation. Conventional power plants have to figure out how to be just as profitable in the new world as in the old one.

What will be the new business model going forward? I think utilities need to shift from an asset orientation to a services orientation.

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Christian Hampel leads the German Energy Law practice, which advises national and international energy supply companies as well as industrial clients on regulatory and contractual issues. He has more than 10 years of experience advising clients in the energy sector. Prior to joining EY, he was at Linklaters, where he advised project developers and financing banks on the acquisition and development of renewable projects in Germany and Europe.
Australia: renewables review gives investors the jitters
The Australian Government’s recent review of the Renewable Energy Target (RET) — and the subsequent loss of investor confidence — illustrates how legislative risk can affect tax policy. What lessons are there for other countries?

Paul Laxon reports

Fundamentally, the RET is a wealth transfer mechanism to ensure that renewable energy producers (which typically have higher cost structures than fossil fuel generators) are competitive. To date, the program has successfully met its objective of changing Australia’s electricity generation mix to cleaner sources and reducing greenhouse gas emissions in the electricity sector.

In fact, the country’s rooftop solar sector was almost too successful, generating 6,400GWh of electricity in 2013 — far exceeding the RET’s original target of 4,000GWh by 2020.

With the change of government in September 2013 came concerns about the costs of the RET and the extent to which it was needed, given lower than forecast electricity demand. In February 2014, the Abbott Government appointed an Expert Panel to review the RET and to suggest possible changes. Despite concluding that “the RET is exerting some downward pressure on wholesale electricity prices,” the report suggested:

► Abolishing the small-scale renewable energy scheme (SRES) or phasing it out by 2020

► Closing the large-scale renewable energy target (LRET) to new investors and letting it operate for existing generators until 2030, or modifying the LRET target to a share of growth in the electricity demand

Loss of investor confidence
Legislative risk is always present when it comes to tax policy and is one of the biggest challenges to investment in renewables. It’s important to acknowledge that just the act of appointing a committee to review a program can cause a loss of investor confidence.

As a result of the RET review, a total of US$15b in large-scale renewable energy projects was put on hold, with little financing committed during the past 18 months. Plans to build the world’s largest concentrated PV solar plant —100MW in Mildura, Victoria —were also canceled due to low wholesale prices and uncertainty over the RET.

In addition to this review, a statutory review was published by the Climate Change Authority (CCA) in late 2014. The CCA recommended retaining the RET target but potentially extending the time period for achieving the target by, for example, three years.

What are Australia’s targets for renewables?
In its current form, the RET calls for 20% of energy use to be sourced from renewable energy by 2020, with a target specified in the legislation of 41,000GWh.

The RET scheme dates back to the Howard Government; it was launched in 2001 to achieve an additional 2% of renewable energy generation by 2010. RET was expanded in 2009 by the Gillard Government to ensure that at least 20% of Australia’s electricity would come from renewable sources by 2020, or 41GWh.

So how much are subsidies costing Australia?

Globally, the International Energy Authority (IEA) estimates that fossil fuel subsidies were nearly US$550b in 2013, more than four times the subsidies for renewables (US$121b in 2013).8

In Australia, estimates for the incentives in place for fossil fuels vary widely, from the International Monetary Fund (IMF) 2011 estimate of A$23b/y (US$18.7b/y) to the Organisation for Economic Co-operation and Development (OECD) 2013 estimate of A$8b/y (US$6.5b/y). Such variations in estimates arise from differing calculation methodologies: the OECD estimates include only the direct costs spent by federal and state governments on subsidies, while the IMF estimates are calculated with reference to international and cost-recovery prices.

Australia’s incentives for fossil fuels include:

► Diesel fuel rebates: A$5.7b/y (US$4.6b/y)

► Accelerated depreciation of assets

► Emissions Reduction Fund (cash incentive to polluters to abate their greenhouse gas emissions): A$2.55b (US$2.1b) over 10 years

► Exploration and prospecting deductions

In Australia, incentives for fossil fuels total an estimated US$6.5b–US$18.7b, depending on how the estimates are calculated. Subsidies for the RET total an estimated US$1.6b.

Sources: OECD 2013 estimates, IMF 2011 estimates.

Subsidies for the RET total an estimated A$2b/y (US$1.6b/y). Broadly, the RET scheme operates by allowing generators of renewable energy to create certificates for every MWh of renewable energy generated. Certain entities such as electricity retailers are required to purchase these certificates and give them to the Clean Energy Regulator each year to demonstrate compliance with the program. This demand for certificates creates value in certificate generation, forming an additional source of revenue for renewable electricity generators.

**Questions to address going forward**

The current question being debated is what the renewables target should be going forward. Demand for electricity is lower now than when the targets were set. So should it be kept at 41,000GWh (intended to be 20% of demand based on forecasts) or lowered to 27,000GWh (which represents 20% of actual demand)?

The impact of reducing the target will be to reduce the attractiveness of the renewables sector for investment. The higher the volume of output that can give rise to the creation of certificates, the more attractive it is to invest in the sector, knowing that there is a future demand for renewables in the country.

Another question raised by the RET review is how cost and price structures are aligned. Network costs are currently allocated by demand from the end user. But there’s a mismatch between the cost of retail electricity (dominated by transmission) and the price of retail electricity (which is based on energy use), meaning that customers who put rooftop solar panels on (and who can afford the up-front cost to do so) typically pay a proportionately lower share of network costs while still enjoying the reliability of the network. That’s not a system that can work going forward.

With any tax policy, there will be winners and losers. ... The Government needs to determine what is in the country’s best interests and set a clear course that investors can trust.
This question of allocating the costs of a reliable network is one that Australia, and many other countries (see article on Germany’s renewables law on page 10), will be debating in the coming years.

Ultimately, as with any tax policy affecting the energy sector, the Government and the opposition parties must carefully consider what policies are most desirable from a social and economic perspective and formulate policy accordingly.

With any tax policy, there will be winners and losers. It really comes down to what kind of world we want to live in. If we want a more renewables-based system, then it will come at a short-term cost because it is uneconomic to invest in the sector at the moment, though in the long term we may have a better quality of life.

The Government needs to determine what is in the country’s best interests and set a clear course that investors can trust — because if Australia is not an attractive market for global mobile capital, they will invest elsewhere. The RET came about with bipartisan support, and political consensus on this next version of the RET will go a long way in helping the market to achieve the desired outcomes. The energy sector is a very long-term investment with a long payback period; reducing risk for investors is a key part of the equation.

In the coming months and years, the Government has some important choices to make around how it leads on this issue and how they bring the Australian people — and those investing in the energy sector — with them.

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Paul is a Transaction Tax partner based in our Brisbane office. He advises clients in the power and utilities and infrastructure sectors, and he has both private sector and government clients. Paul has been involved in transactions across the value chain, from transmission and distribution to generation and retail. He has also advised on market reforms and the tax implications associated with such reforms.
With limited budgets and a sector in the midst of transformation, few power and utility (P&U) companies are embarking on pure research and development (R&D). But are utilities missing out on grants to fund large-scale demonstrations and bring ideas to market?

Frank Burkert reports.

Some utilities may be surprised to learn there is R&D funding available to answer market-facing questions such as:

► Which markets will be the most important for us in the future?

► What technology do we need to develop to secure future growth?

► How are we going to create competitive advantage?

In 2014, the European Union (EU) launched Horizon 2020, an R&D grant program offering nearly €80b (US$90.1b) in cash contributions during 2014 to 2020. Depending on the topic, Horizon 2020 will fund up to 100% of eligible costs.
The good news is that Horizon 2020 represents a 23% increase over the budget of the previous EU Framework Program (FP7) and far less red tape. Nearly €80b (US$90b) is on offer to drive breakthroughs in energy-related topics, discoveries and economic innovations.

There is also a shift away from pure or applied research and toward large-scale demonstrations, testing R&D outcomes and bringing good ideas to the market. Utilities can currently apply for funding of:

- Demonstrations of renewable electricity, heating/cooling technologies and advanced biofuel technologies
- Analyzing energy systems
- Research into the uptake of current and emerging renewable electricity and bioenergy, heating and cooling technologies
- Innovation and technologies for the deployment of meshed offshore grids, transmission grid and wholesale market and large-scale energy storage
- Joint demonstration and validation of innovative energy solutions
- Deployment of a common framework for measuring the energy and environmental efficiency of the information and communications technology (ICT) sector
- Large-scale demonstration proposals for smart cities and communities, including solutions integrating energy, transport and ICT sectors
- Development of system standards for smart cities and communities

The program launched in 2014, so information on who has received funds to date is not publicly available. However, Europe’s four largest utilities participated in the last funding period, leading hundreds of projects with a total volume exceeding several million euros.

How Horizon 2020 works

Horizon 2020 consists of numerous “Work Programs” focused on different sectors; at the core are energy, environment-related topics and competitiveness.

The program aims to tap into all the intellectual property currently held in universities and research centers across Europe. Applications must come from a consortium that includes both industry and research organizations. Typically, we are seeing consortia with an average of 20 members in successful applications.

The programs that we see being successful are large-scale, multiple-stakeholder demonstration projects or projects to validate the market readiness of new technical and conceptual solutions. The range of funding applied for varies widely, from €3m–€40m (US$3m–US$45m), depending on a range of factors such as the type of activity, potential impact on creating new jobs and securing existing jobs, and how developed the region is.
If you want to be innovative in the future, you need grants. Non-repayable cash grants can easily cut your R&D costs by 50% to 70% or even eliminate them entirely.

<table>
<thead>
<tr>
<th>Name of grant program</th>
<th>Area of focus</th>
<th>Program value</th>
<th>Proportion of project funded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horizon 2020</strong></td>
<td>Energy, environment-related topics and competitiveness</td>
<td>€80b (US$90.1b) from 2014 to 2020</td>
<td>Maximum of 100%</td>
</tr>
<tr>
<td><strong>NER 300</strong></td>
<td>Innovative, low-carbon energy demonstration projects, in particular carbon capture and storage, renewables and smart grid</td>
<td><strong>2013:</strong> €1.1b (US$1.25b) <strong>2014:</strong> €1b (US$1.14b)</td>
<td>Maximum of 50%</td>
</tr>
<tr>
<td><strong>Connecting Europe Facility (CEF) Energy</strong></td>
<td>Renewable energy</td>
<td>€5.85b (US$6.65b) from 2014 to 2020</td>
<td>75%</td>
</tr>
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Well-funded incentive schemes for P&U

Horizon 2020 is just one of the sources of grants and incentives for P&U companies. Many are not research-oriented—they’re aimed at security of supply or projects of strategic interest to the EU but not yet economically feasible.

Two of the best-known incentive programs (all offering cash contributions) for P&U are:

► NER 300 focuses on innovative, low-carbon energy demonstration projects, in particular carbon capture and storage, renewables and smart grid. In 2013, €1.1b (US$1.25b) was awarded to 20 renewable energy projects; in 2014, €1b (US$1.14b) was awarded to 18 renewable projects and 1 carbon capture and storage project.9

► Connecting Europe Facility (CEF) Energy covers renewable energy. The program value is €5.85b (US$6.65b) from 2014 to 2020.10

How EY can help

Utilities contemplating new or expanded investments in R&D should seek guidance, particularly in Europe’s shifting tax landscape. EY can support clients by analyzing tax incentives and grants under different jurisdictions and in different countries.

EY’s Global R&D and Innovation Service team works with utilities across the entire process, from finding the right grant program and partners to the project closure note, keeping in mind the tax implications. We can support your organization through any or all of the following steps:

► Strategic advisory and support through internal decision-making on which project to pursue and which grant program offers you the best prospects for success

► R&D and innovation road maps

► Finding a consortium partner, including introductions to inventors and new entrants

► Managing the consortium and the grant application

► Advising on financial compliance (budgets, KPIs, etc.)

► Financing

► Legal issues and IP management, including a valuation of R&D expenditure that estimates what every euro of R&D activities today will mean in five years’ time in terms of revenue

► Line out tax effects of R&D activities
There are three pieces of advice we would offer any P&U company considering the grant process, based on our years of experience of successful applications:

1. **Remember, strategy first, grant money second:** it’s a strategic decision first and foremost to go for R&D or incentive programs. Make sure any grant proposals align with your company strategy.

2. **Build a strong case for your project:** because these applications receive a discretionary amount, building a good case is important in order to receive the highest funding possible.

3. **Leave enough time to find the right partners:** who you partner with will be crucial to your application’s success. In our experience, this takes at least two months.

### Innovation needed to meet challenges of transformation

A transformation is under way in the P&U sector, and utilities need to innovate and invest to stay on top of the game. If you want to be innovative in the future, you need grants. Non-repayable cash grants can easily cut your R&D costs by 50% or even eliminate them entirely. This gives you the freedom to carry out disruptive, riskier R&D work if that fits your strategy.

Instead of paying strategy consultants to tell you which markets you should be in and how to secure growth, collaborate with others on the grant programs. These enable you to focus on leading technologies coming to market in the next three to five years, as well as gain access to new areas of market knowledge. Working on incentive projects also brings you in much closer contact with regulators. For example, the European Commission is quite open to this because, at the end of the day, it wants to help the European economy to grow.

Cross-border innovation and cooperation with the best partners will put utilities in the best position to navigate the future with the best technologies and solutions, aimed at the right strategic markets.

To succeed in the future, utilities must look at their business and the world around them differently. You have to try new things and be out there experimenting. You have to build on intangibles—which brings us straight back to knowledge, straight back to collaboration with others, and straight back to making the best use of available grants.

### Growth in R&D intensity, 2000–10

<table>
<thead>
<tr>
<th>Country</th>
<th>2000</th>
<th>2010</th>
</tr>
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<tbody>
<tr>
<td>EU</td>
<td>1.74%</td>
<td>1.91%</td>
</tr>
<tr>
<td>Japan</td>
<td>1.91%</td>
<td>3.00%</td>
</tr>
<tr>
<td>United States</td>
<td>3.26%</td>
<td>3.00%</td>
</tr>
<tr>
<td>China</td>
<td>2.90%</td>
<td>2.90%</td>
</tr>
</tbody>
</table>

Source: OECD Factbook 2013.
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Frank Burkert has more than 15 years of experience in the field of public funding (innovation and investment funding). He helps a range of clients in the power and utilities sector and other industries to acquire funding and coordinate global R&D funding strategies, based on his extensive knowledge of global R&D funding regimes and wide professional network.
As an asset-intensive sector, power and utilities (P&U) has been actively pursuing industry-specific guidance on TPR in the US. Final regulations are here at last — so is it time to celebrate?

Susan Grais and Dan Penrith report

With billions of dollars in capitalized assets, the P&U sector continues to work diligently to implement the final TPR regulations, released in September 2011, as well as industry guidance and additional procedural, clarifying guidance that has been long awaited and issued as recently as February 2015.

Over past decades, a considerable body of case law has developed due to Internal Revenue Service (IRS) and taxpayer controversy around TPR issues, such as determining when an expenditure results in a capitalizable improvement or a deductible repair. So when the IRS issued Notice 2004-6 more than a decade ago, it stated its objectives as clarifying and
simplifying the law and reducing taxpayer controversy. The IRS also expressed an interest in addressing industry-specific issues, such as determination of the appropriate “unit of property” to which an expenditure relates. For P&U, did the IRS succeed?

**Clearer, yes, but more complex**

The final regulations and related industry-specific guidance such as published revenue procedures provide clarity on a number of issues:

- Defining what constitutes a unit of property
- Providing a safe harbor allowing taxpayers to expense for tax the costs of acquiring certain types of electric property (items costing up to US$5,000 if they meet the requirements)
- Defining what constitutes a capitalizable improvement, such as a restoration

However, along with clarity has come added complexity. The guidance is literally hundreds and hundreds of pages. For example, there are numerous standards to apply to determine whether a restoration has occurred. If one associates simplification with brief, easy-to-apply rules, these regulations have mixed success. There are some safe harbors, which are welcome simplification; however, there are more comprehensive, detailed rules overall. Further, the added compliance effort is significant for capital-intensive industries, such as P&U organizations.
As to whether the IRS succeeded in reducing controversy, we believe that ultimately will depend to a significant extent on its approach in examining and interpreting these rules. We are hopeful that there will be less controversy, particularly for the P&U sector, because it has been so actively engaged with the Treasury Department in obtaining industry-specific guidance.

**So what has changed from the 2011 temporary guidance?**

There are four areas of particular interest to the P&U sector:

1. Repairs and maintenance
2. Dispositions
3. Materials and supplies
4. Acquisitions

For utilities, the most important generally are the first two: the treatment of repair and maintenance expenditures and the treatment of dispositions of tangible property.

In order to determine whether an expenditure is deductible as a repairs and maintenance expenditure, the taxpayer must first determine the appropriate unit of property. Guidance has already been issued to assist certain taxpayers in the sector to make these determinations. For instance, Revenue Procedure (Rev. Proc.) 2013-24 defines steam and electric generation units of property and major components, and Rev. Proc. 2011-43 provides rules for certain electric transmission and distribution property.

Guidance on the natural gas industry has not been released but is expected in 2015.

Once the unit of property is determined, then a set of rules needs to be applied to determine whether the expenditure results in a capitalizable improvement or a deductible repair. Specifically, taxpayers need to determine whether the expenditure results in a betterment, a restoration, or a new or different use of the property; if so, then the expenditure must be capitalized, otherwise it can be deducted as a repair of the property.

Incurring costs to replace portions of property is common, and whether such costs must be capitalized can be a gray area. Ascertaining what are the major components of the unit of property is key in this analysis, as the rules require capitalization of the replacement of a major component of a unit of property.

The final regulations define “major component” as a part or combination of parts that performs a discrete and critical function in the operation of the unit of property. A “substantial structural part” is defined as a part or combination of parts that comprises a large portion of the physical structure of the unit of property. For building property, the final regulations state that an amount is for the replacement of a major component or substantial structural part if the replacement includes a part or combination of parts that comprises: (1) a major component or a significant portion of a major component of the building structure or any building system or (2) a large portion of the physical structure of the building or any building system.

For example, if you’re replacing a minor segment of a concrete pipe (assume the contiguous pipe is the unit of property), you might use PVC for the replacement. Assume that the capacity, quality, output, etc., of the repaired pipe will be the same, and the actual activity is just a routine, recurring repair that does not entail a restoration (e.g., because a major component of the unit of property was not replaced and the removed pipe segment was not deducted, if not fully depreciated, at the time of the repair) or a different use. In this case, the expenditure would not be a betterment to the property, even though different materials were used. Thus, under the facts provided, the expenditure would be deductible as a repair.

There’s also interplay between the repair and maintenance rules and the disposition rules that our clients will need to consider, as the previous example alludes to regarding tax treatment of the removed pipe.

**What do P&U companies need to do?**

The IRS has required mandatory compliance with the final regulations for affected taxpayers (generally, those with tangible property effective for tax years beginning in 2014). The rules typically will require the filing of Form(s) 3115, Application for Change in Accounting Method, and appropriate tax elections. There is also a one-time-only opportunity to make catch-up adjustments for 2014 tax years with respect to prior partial dispositions through the filing of a Form 3115.
The end result of making an optional tax election under the rules to capitalize otherwise deductible repair costs incurred in 2014 is less tax deductions and, generally, a higher federal tax liability.

A different strategy, and one we see many utilities follow, is to pursue deduction of repairs to the maximum extent permissible under the tax rules. This strategy results in higher costs to implement but ultimately a lower federal tax liability.

Once utilities are happy they have the right strategy, they need to identify current accounting methods. What are their present methods of accounting for the tax year beginning in 2014, prior to any changes to implement the new rules? They will need to compare the present method with the proposed methods required by the regulations and any applicable, additional IRS published guidance, such as industry-specific revenue procedures and general procedural guidance regarding TPR method changes.

Lastly, they need to determine how to collect the additional data necessary to comply and to modify their systems to conform to these rules on a timely basis.

Invest time and resources to get it right
If utilities don’t implement the final regulations properly, they could be in the unfortunate position of a tax exposure and an unanticipated adjustment. There may be other unintended consequences.

Tax technology is a key to collecting the necessary data and compliance with the final regulations and applicable IRS procedural guidance. This is where EY can help. We are a leader in the P&U sector, particularly in helping clients implement these rules. EY is at the forefront of developing strategies to simplify implementation to efficiently meet the objectives of the organization and the tax department, including the use of established tax technology to facilitate capturing data and identifying what repairs should be deductible versus capitalized.

For example, EY has exceptional capabilities to support the use of valid statistical sampling, which was embraced by the IRS in Rev. Proc. 2011-42 and Rev. Proc. 2011-43. Statistical sampling, in essence, reduces the number of items that have to be examined. This is an important tool for efficiently analyzing and determining deductible repairs and accounting for dispositions.

Lastly, they need to determine how to collect the additional data necessary to comply and to modify their systems to conform to these rules on a timely basis.

Going, going gone:

Catch-up adjustments only in FY14

If you want to pursue an opportunity for partial dispositions of property with a catch-up tax-favorable adjustment, the 2014 tax year is your only opportunity to do so. You can deduct missed partial dispositions that should have been deducted prior to 2014: it’s called a Section 481(a) adjustment related to partial disposition of components of tangible property. This has to be done by the due date of the tax return (including any valid extension) for the 2014 tax year, so for corporations that are calendar year taxpayers that have filed an extension, the date is 15 September. This is a one-time-only opportunity to make this beneficial accounting method change, through the filing of a Form 3115 to obtain a tax-beneficial catch-up adjustment.

P&U organizations can all benefit from the effort the sector has put into developing industry-specific guidance, which has reduced ambiguity and resulted in clearer definitions. But a final word of advice – don’t underestimate the compliance effort required or the need to assess implementation options and opportunities (such as the availability of the one-time partial dispositions method change for the 2014 tax year) under the new rules.

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