Energy Executive of Tomorrow – Skills & Challenges

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The huge technological shifts and policy pressures facing the energy industry are redefining the set of skills that companies need to look for when recruiting executives.

Decarbonisation – New Challenge for Energy Executives

Pressure for decarbonisation from governments, intergovernmental organisations and NGOs around the world remains strong, despite the US withdrawal from the Paris climate accords. In power generation, this is driving a fundamental shift away from fossil fuels and toward renewable energy sources. And that policy-driven shift has helped to kick-start a virtuous cycle in which the price of building renewable generation capacity is plummeting, and battery technology is steadily improving, driving further innovation and decarbonisation.

All of that is also changing the way people think about mobility, helping them move away from diesel and gasoline engines, toward electric motors. Here China is leading the way, pushing for a shift to electric vehicles as a way to drastically cut the smog that plagues some of the biggest cities in the world's second-largest economy.

"The real question is when does China, which has less legacy supply chain and wants to reduce pollution, become a leader in electric mobility?" World Energy Council Secretary General Christoph Frei asked in a recent interview. "They certainly have expressed this ambition and that will truly be a tipping point."

Even as the world continues to wait for that tipping point, there is no longer any denying that a fundamental transformation is taking place, and energy companies need to seek out and hire executives with the skills to respond.

Future of Energy – Internet of Things, Blockchain, Prosumers

Meanwhile, the rise of the Internet of Things (IoT), blockchain technology and prosumers who can feed power back into the grid are reshaping the markets for power. The internal combustion engine may not be dead yet, but in power generation, the days when energy flowed in one direction – from large, centralised producers, outward to individual consumers – are well and truly gone. In the place of that model is an interconnected network of entities buying and selling from one another, linked together by a smart grid, using blockchain technology to keep track of transactions and reduce transaction costs.

"Your refrigerator [...] on its own is currently about 100 watts, but if you can capture a million households' refrigerators and turn them all off at the same time, then you have a 100-megawatt power asset," Frei said. "That is a very decent storage asset — and you haven't paid for it, you have simply digitised an existing one. If blockchain enables things like that and removes intermediaries from some processes, you can see it making a real difference in the energy sector."

Beyond Oil & Gas – New Skills Required From Energy Executives

So while energy companies still need people with technical qualifications, it's about much more than fossil fuels. The energy executive of tomorrow will need to be able to think in terms of distributed generation networks, with general engineering skills that allow them to think flexibly about power sources based on a given time and place, rather than skills such as geological knowledge tied to a particular type of fossil fuel.

As the new world of prosumers and interconnected devices replaces the traditional, more oligopolistic model, energy companies also need executives with skills in financial modelling, designing complex markets and operating on them. This applies both to companies as a whole, which need to make sure they have the right mix of skills on their team, and to individual employees, all of whom need to learn how to think in terms of the new market structure, constantly expanding their personal toolbox of skills.

New Actors of the Energy Market – Are Energy Executives Ready to Talk to Them?

No matter how fast and how far these processes go, there is every indication that energy will remain one of the most highly regulated industries, so the ability to deal with regulators and NGOs will always be a key skill that companies will have to recruit for. But the rise of renewables and smart grids means a relative decline in the importance of dealing with environmental issues at extraction sites, and a relative increase in the importance of working with market regulators, consumer protection agencies and consumer-rights NGOs.

The energy executive of today needs to have the skills to deal with these new actors, to ensure the new markets that are being designed right now provide a level playing field for incumbents, without stifling innovation or setting off a consumer backlash.

Finally, all of these changes mean that energy executives also need to be prepared for a new type of attitude toward their customers. The rise of the prosumer means a new model for the relationship between companies, households and other businesses, shifting the balance of power in favour of the client. Energy companies need executives with a deep awareness of how this shift affects their relationships with consumers who have also become suppliers, and how to work with them for the benefit of all.