

SHOULD ENERGY COMPANIES PLAN FOR CLIMATE CHANGE?

I recently visited a small developing country that has immense hydropower resources in order to help the government plan for climate change. While greenhouse gas emissions are low, projected changes in temperature and precipitation are projected to be significant and impact water resources – both from glacial melt and from changes in seasonal run-off levels. Perhaps not surprisingly, I learned that the designs and feasibility analyses for the multi-billion dollar, run-of-river hydroelectric plants to be constructed in the next decade did not consider how climate change will impact water supply from precipitation and glacial melt.

Miners and oil and gas companies might believe they are less vulnerable to climate change impacts compared to hydropower, which may be correct. But some recent events show their susceptibilities: flooding of coal mines in the Bowen Basin in Australia brought production for a while down to next to nothing, and a multi-year drought in Saskatchewan nearly halted production at another mine. Cyclone Gonu in 2007 disrupted Gulf region oil assets, and permafrost thaw in Alaska has halved the number of days for oil exploration. Other trends, such as lowering of water levels in the Great Lakes of U.S. and Canada have led to smaller shipping loads. And the indirect impacts of climate-induced stresses on water supply, food supply, urban infrastructure, etc., influencing governance, national security, civil stability, and migration - to name some responses - could be even greater than the simpler technical and cost challenges energy projects might face.

Energy companies need to manage a variety of different risks: price volatility may be short term but most energy projects are long term. Investments made today are likely to be around into the middle of the 21st century. This is more than far enough into the future for assets to be exposed to massive shifts in both commodity demand – owing in large part to global responses to climate change – and to climate impacts – temperature, precipitation, extreme weather, etc. - that most research projects will be significant regardless of future emissions control.

And while uncertainties are inherent in climate projections, over the past decade climate models have improved considerably. In some regions forecasts can be made for areas as small as 20 by 20 kilometers.

Of course, exploring different emission scenarios is essential in order to have a robust perspective of impacts. While the Copenhagen Accord declares global temperature should not increase by more than two degrees Celsius, analyses of country pledges indicates Copenhagen may deliver more like a 3.5 degree increase and prospects for a treaty to be completed this year are looking unlikely. But even a two-degree increase will result in some serious impacts on infrastructure, water supply, and other resources important for energy production.

As such, energy companies have both the exposure and access to analytical tools allowing them to understand and address the many questions related to future climate change impacting energy investments, namely:

- What are the likely climatic changes an investment might face? Changes in temperature, precipitation and severe weather events, among others all might be significant impacts on energy infrastructure and transportation logistics.
- How will these changes impact an asset? Does it reduce (or increase) the likely costs or revenues and how?
- How might climate changes be planned for: how might infrastructure design be more resilient to changes and uncertainties in changes?
- How might competitive advantage be gained from planning for climate change: in understanding the long term returns and demonstrating to potential investors that a comprehensive plan is in place to minimize or transfer all risks?

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Energy Edge has a team of experts covering all aspects of international energy investments, climate change and mitigation and adaptation responses, and are happy to discuss working with you on understanding your project's exposure to climate change and strategies to gain competitive advantage through smart design and investment choices. Please contact [Karl Schultz](#) for a preliminary chat or to set up a workshop discussion.

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