## In powering the planet, even clean energy comes with environmental cost

DERRICK PENNER (HTTPS://VANCOUVERSUN.COM/AUTHOR/DEPENNER) Updated: June 20, 2018



Independent power producers play a vital role in addressing climate change, says Clean Energy BC executive director Paul Kariya. ENERGYBC

With 2.5 billion people on the planet having little or no access to energy, developed nations shouldn't be so judgmental about how they manage to

7/12/2018, 1:09 PM

provide it to themselves, argues geologist and energy expert Scott Tinker.

"This preconception of clean/dirty, good/bad is not helpful," Tinker said to an audience at the Resources for Future Generations conference in Vancouver Tuesday.

Tinker, co-producer of the energy documentary Switch and state geologist for Texas, spoke on a plenary panel on the topic of the future of energy with B.C.-based renewable-energy advocate Merran Smith, who is also the executive director of Clean Energy Canada.

And while there was agreement on stage about the need to de-carbonize the planet's future sources, Tinker offered a caution to not write off certain sources of energy, including nuclear, in getting there and a reminder that even so-called clean sources of energy come with a cost.

"Because (energy sources) are not either good or bad or clean or dirty, they are just different," Tinker said, and with enough investment even the environmental impact energy sources considered dirty, such as coal or oil, can be considerably reduced.

Smith made the case that the transition to so-called clean, low-carbon energy is moving more quickly and earnestly in other parts of the world and there are ways that it can be sped along in countries such as Canada.

Costs of renewable sources, such as wind and solar, have dropped dramatically and the uptake, even in developing nations such as India and Brazil, is growing fast.

"While we're still consuming a lot of oil and gas, we're seeing a big surge in the growth of renewables," Smith said in an interview after the session. "Last year, China was the biggest investor, \$138 billion, into wind and solar."

In the session, Smith argued that in Canada the discussions around transitioning off of fossil fuels, needs to be "de-politicized." Countries such as the United Kingdom and Germany have better consensus about the direction that they are heading.

"I think there's agreement on everyone's part that it is underway," Smith said, "and if we're going to meet our climate goals, we need to accelerate it."

2 of 5 7/12/2018, 1:09 PM

Smith said Canada has advantages, such as an electricity grid that is 80-percent clean, driven by huge hydroelectric sources in B.C., Manitoba and Quebec.

Canada has the basis to use electricity to power and reduce emissions from its existing oil and gas sector and develop clean technologies that it can export, Smith said.

"Those who are going to win are the ones who got in first," she said.

Tinker, however, said people need to be prepared to accept the amount of other resources it will take to scale up other sources of energy to amounts that are useful.

"The gathering of solar and wind, or waves and tides, takes a lot of stuff," Tinker said, referring the amount of solar panels, wind turbines and transmission lines it takes.

That, he added, is equipment that wears out and needs to be rebuilt. To mine for the metals and minerals has its own impact on the planet.

Renewables such as solar are great where they fit in, such as places without a lot of infrastructure, Tinker said, "I just don't think you can pick a form of energy and say 'that's the solution."

The Resources for Future Generations conference, which started Monday and runs through Thursday, was initiated by the International Union of Geological Scientists, said conference chair John Thompson.



3 of 5 7/12/2018, 1:09 PM



John Thompson, chair of the Resources for Future Generations conference. June 10, 2018. Stuart McNIsh/Special to PNG [PNG Merlin Archive] STUART MCNISH / PNG

Thompson, a part-time professor at Cornell University in Ithaca, N.Y. and part-time consultant on responsible resource development, said the idea is to open up a discussion on where resources are going to come to meet the planet's future needs and involve the next generation in talking about how to do it.

Thompson said 2,000 people are at the event, with about half international attendees and half who identify themselves as early career.

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4 of 5 7/12/2018, 1:09 PM

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5 of 5