



14th Middle East Geosciences
Conference and Exhibition

GEO YPS Webinar Series: Opportunities for Geoscientists: Extraction & Processing of Advance
Materials for Energy Storage Technology
Tuesday 29 September 2020 | Edith Newton Wilson, Rock Whisperer

Questions and Answers

- 1. Could you please shed some light on what transferable skills a geomodeller / reservoir simulation engineer would have to transition into the clean energy business? Any tips would be welcome - Jorge Costa Gomes**
 - Reservoir skills are most directly transferable to CCS or the geothermal world, where drilling, fracing and reservoir modelling are all key technical components. While these were not the focus of this presentation, there are many AAPG and SEG technical sessions on these subjects.
- 2. How are the environmental regulations to develop mining in countries with potential for Li, Co & graphite. - Carolina Olivares**
 - The most compelling driver for good ESG performance is corporate reporting and investor pressure. OEM's are beginning to demand sustainable supply chains, and the UN SDGs are soundly reflected in most corporate measures, commonly according to GRI standards.
- 3. What about costs associated with clean-up. I have heard we don't have enough waste disposal sites for the used-up batteries and discarded turbine blades. - Ernest Berkman**

Besides new battery technologies also design for circularity becomes more and more important: reuse of materials. Could Edith reflect on this? - Aart van der Pal

 - Rather than cleanup or site disposal, entrepreneurs are developing commercial recycling options, starting with scrap from the battery factory floor. In the circular economy of the future, manufacturers and OEMs will look to every link in the supply chain for efficient and economic resources, rather than extraction and disposal.
- 4. "Drivers of the Energy Transition Data is from 2009, how actual is this in 2020? - Aart van der Pal**
 - The resource availability cartoon on the slide is created from 2009 data, but the relative proportions are the important take-away, and they have not changed. The efficiency and cost data are up-to-the minute...at least for today. To maintain an accurate perspective, I recommend that you follow NREL, IRENA, Lazard, the World Economic Forum and the International Energy Association.
- 5. What about total carbon footprint if you consider all the mining and refining? - Ernest Berkman**
 - Carbon foot-print numbers presented in the talk include mining and refining for the infrastructure numbers, but these data still have large error bars, and there is work to be done to standardize measurements.

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6. **Do you think, renewal energy can fully replace the fossil energy? - Joshua Pwavodi**
What about carbon capturing? If we opt to clean and green economy, do you suggest
will neglect crude oil exploitation? - Folashade Ojo

- I offer this perspective. Four years ago, the question was, "renewable energy is so expensive, how can it ever represent more than a few percent of our energy consumption?" Two years ago, the question was, "at such a slow rate of adoption, how can we rely on renewable energy growth to slow climate change?" Now the question, even from the Supermajors, is "how fast can I convert to more economic clean energy resources?" What changed? Technology! and rapidly! And while carbon capture may be a necessary ingredient to arrive at net-zero, from a value perspective I believe that a global carbon price will be necessary to accomplish. Three-word answer - follow the money.

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