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# Principles for policy packages for Deep (80-100%+) Decarbonization

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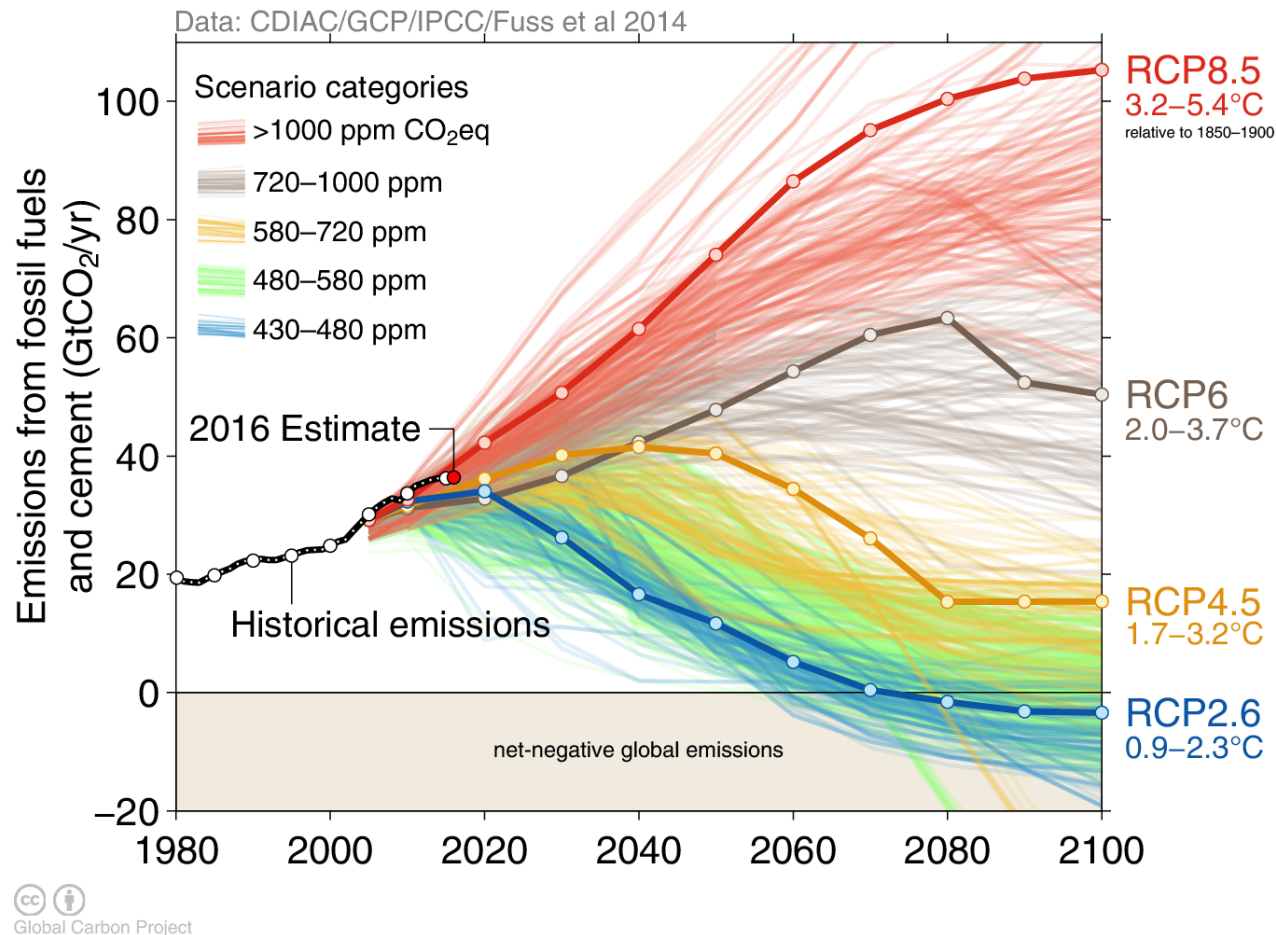
## Key points and assumptions

- +1.5-2°C requires zero global emissions by 2060-2080
- The technology exists to do this for all sectors, but needs development, piloting support, and regulations or carbon pricing
- What we need is well designed policy packages, built on well informed jurisdictional consensus/functioning majorities, that reflect national and regional capacities, politics, resources, and other key circumstances.
- This talk is about what needs to go into making those policy packages, with some (at one time unlikely) success stories from Canada

# The global carbon budgets & what the 2015 Paris Agreement « well below 2°C » means

To 2050:

- ❑ Total GHGs >/2
- ❑ GHGs/capita >/3
- ❑ GHGs/unit GDP  
➤ /~ 10
- ❑ Net-zero ~2070
- ❑ Global peaking ...  
now



Updated with  
data from Fuss  
(2016)

# It is technically possible: the pillars of decarbonization

- Efficiency (min 50% improvement)
- Decarbonization of energy carriers (electricity, hydrogen, biofuels, synthetic hydrocarbons (e.g. NG))
- Switching to decarbonized energy carriers
- Direct emissions reduction
  - Management of all land in consideration of carbon emissions
  - CCS to eventually allow net-negative emissions
- Domestic and international institutions to carry out policy, allow emissions trading, and conduct shared R&D projects

# Principles for building policy packages

- **Policy 101:** Effectiveness (coverage and stringency), efficiency, political survivability & administrative feasibility
- **101+:** The need to reduce fear and build a working majority consensus of stakeholders, ideally through visioning/pathways exercises
- **Policies** must reflect the behaviour of the decision maker
  - **Performance orientated regulations** for less price-sensitive sectors (households), e.g. for buildings, transport, fugitive, land use emissions.
  - **Carbon pricing** for price-sensitive sectors (firms), and to drive innovation.
- **Policies that support:** R&D and prototyping; infrastructure planning and investment (e.g. municipal land use, transit finance,).
- **Institutions to monitor sectoral progress**, and to adjust policy if necessary.

# The Canadian DDPP policy package

- **Best-in-class mandatory energy and GHG intensity regulations requiring the use of zero- or near-zero emission technologies in the buildings and transport sectors (& potentially electricity), applied to all new & retrofits:**
  - Net-zero-energy homes starting in 2025, & commercial buildings in '35
  - All new personal vehicles zero GHG energy by early 2030s, and heavy freight by 2040.
- **Hybrid carbon-pricing, for heavy industry & the rest of the economy:**
  - A general carbon price starting at \$10/tonne CO<sub>2</sub>e increasing \$10/yr, adjustable to tech. progress, revenues used to reduce taxes & fund R&D and piloting
  - Cap & trade for heavy industry, designed to address competitiveness, leakage & linkage.
- **Mandatory controls for all landfill and industrial methane sources.**
- **Land-use policy that values the net carbon flows of large parcels.**

# The upshot – most of the policy “architecture” is in place, but needs to tighten

- Ontario phased out coal 2007-'14, and joined the Western Climate Initiative WCI along with Quebec, which is affectively an upstream general carbon price.
- BC has had a text book carbon tax since 2007, stuck at \$30/tonne CO<sub>2</sub>e. Finally rising.
- Alberta has, as of 2016, constructed a complete policy package, with efficiency regs, coal phase out, RPS for electricity, full cap & trade w/ OBA for all emitters & ... a carbon price
- **Pan Canadian Framework:** The federal government has a minimum carbon price of \$10/t in 2018 rising \$10/year for 5 years, & working on a national cap & trade based on Alberta's system. Homes, commercial buildings and transport codes are aligned with eventual decarbonization. Methane regs under negotiation. **Some reluctant provinces ...**
- **Land use management and “arms-length” monitoring institution missing**
- Questions? [cbataill@gmail.com](mailto:cbataill@gmail.com) or Twitter DM me at @bataille\_chris