

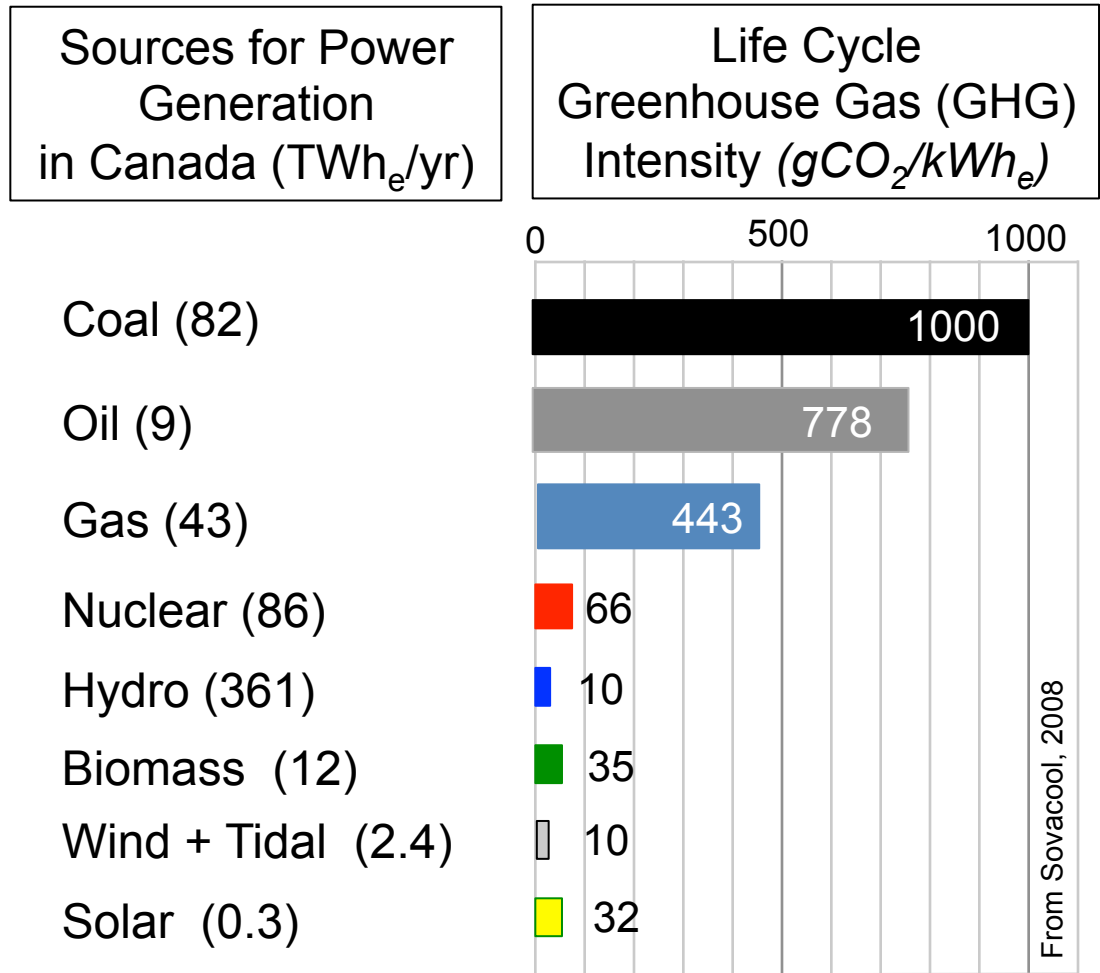
Visualizing Energy:

A case for rethinking Canada's electrical systems.

David B. Layzell, PhD, FRSC
 - University of Calgary -

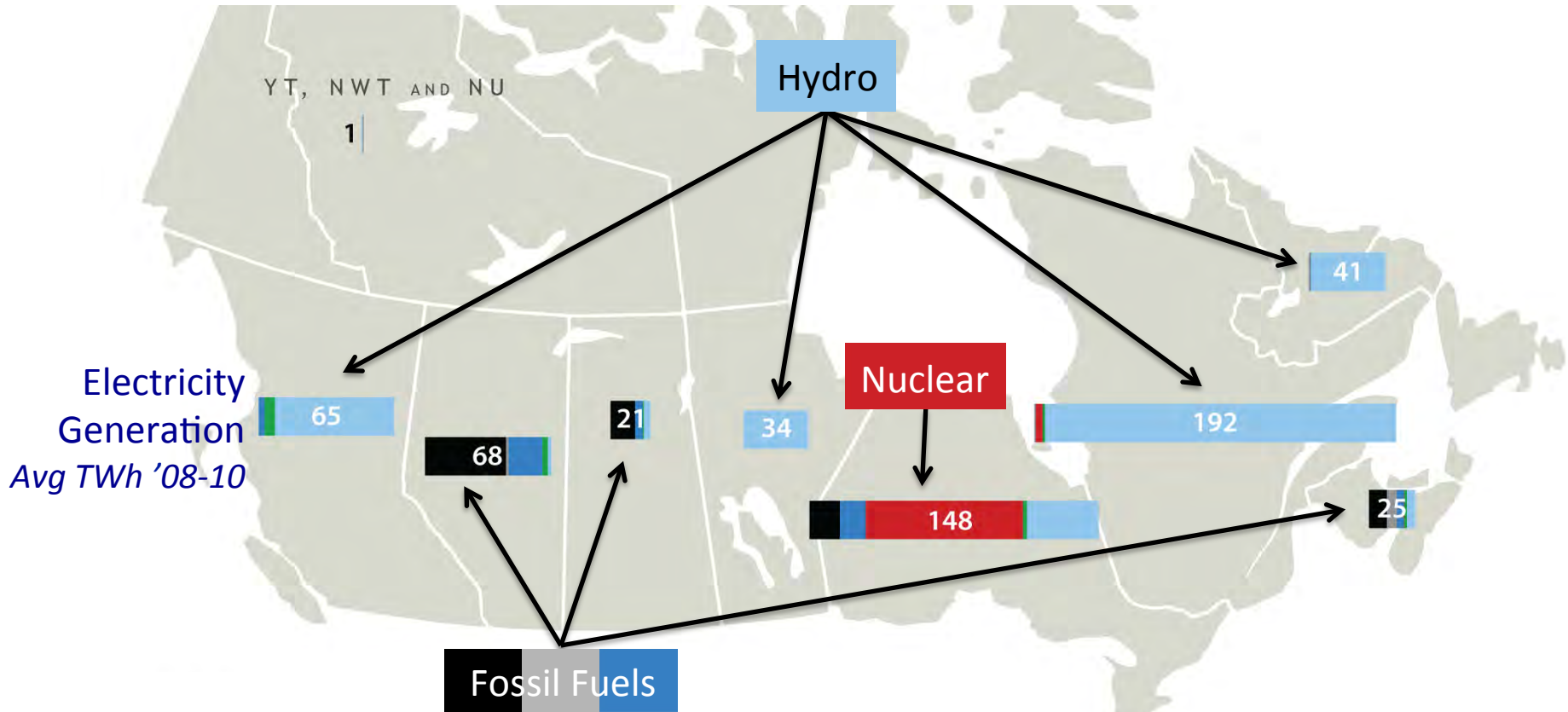
Walrus Talks Energy,
 MaRS Discovery District
 April 4, 2013

Electricity: No emissions at point of use!



Future: ✓ Zero/Low C electricity generation;
 ✓ Incr. from ~25% → 50+% of 1^o energy

Electricity Production

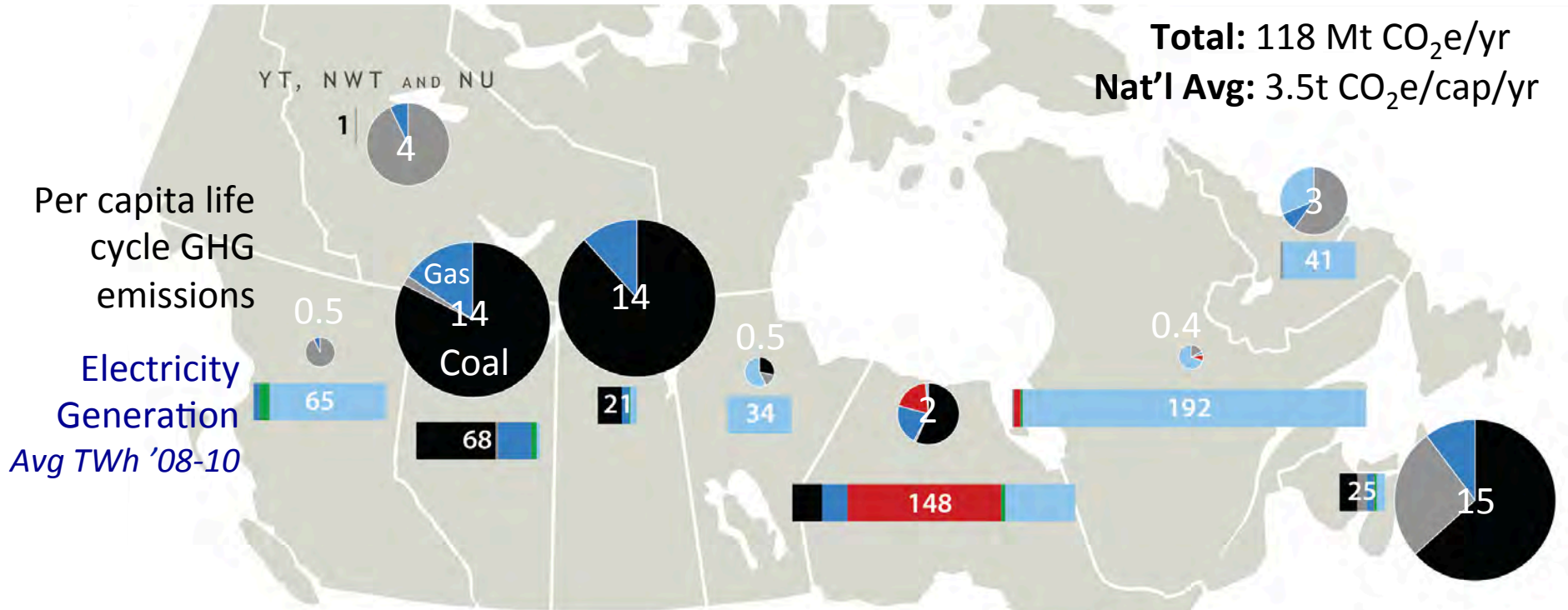


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Sources
 Production: Statcan Cansim 127-0001, 127-0002, 127-0006
 Imports and exports: Statcan Cansim 127-0001, 127-0002
 Interprovincial trade: Statcan non-Cansim data
 Imports and exports price: National Energy Board
 Interprovincial trade price: Statcan non-Cansim data
 GHGs: Sovacool BK, 2008 Energy Policy 36: 2940-2953
 Undeveloped Hydro: Cdn Hydropower Assoc. (2006)

GHG Emissions from Electricity

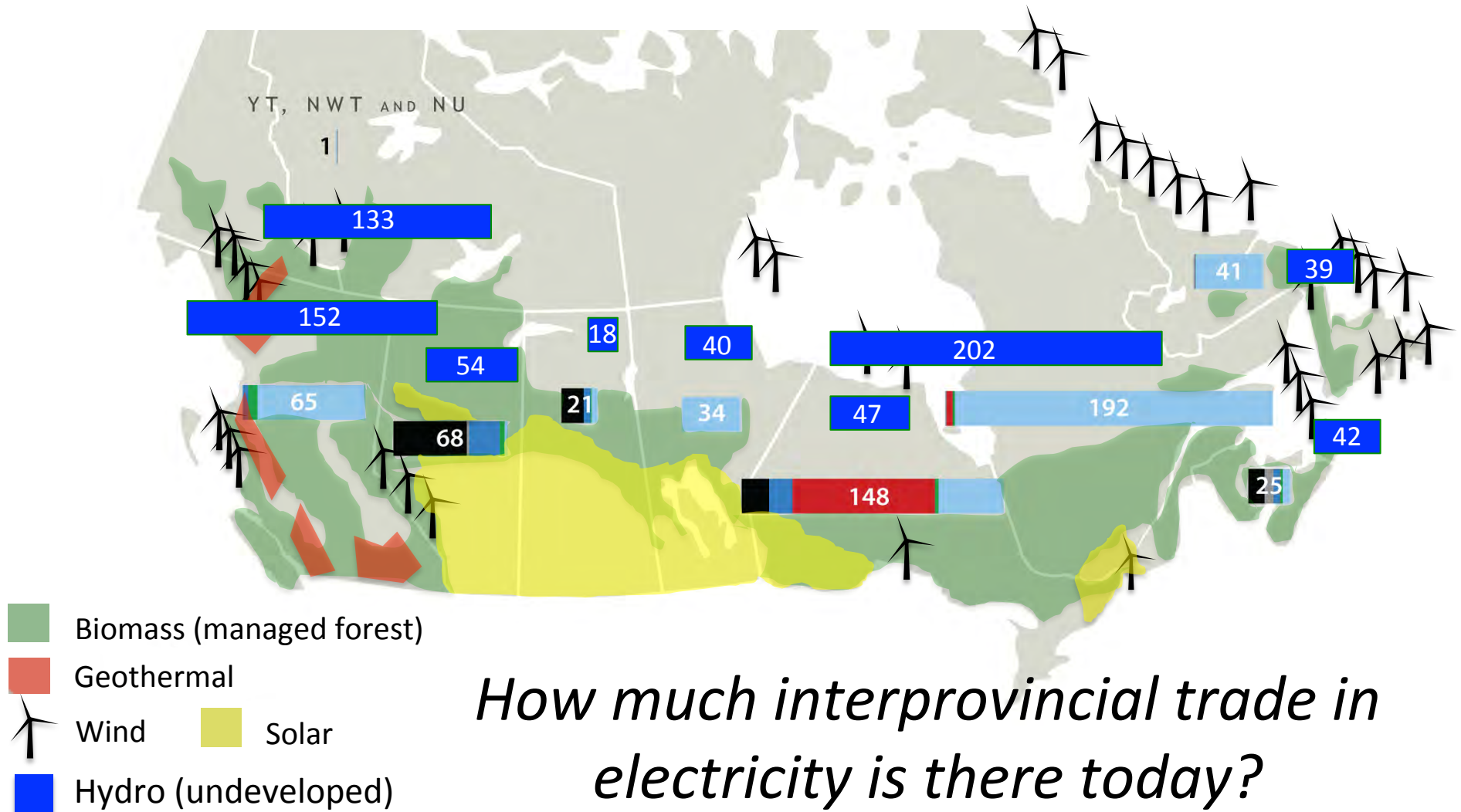
(t CO₂e per Capita)



Why?

Could provinces work together to solve this challenge?

Canada has the Renewable Energy Resources

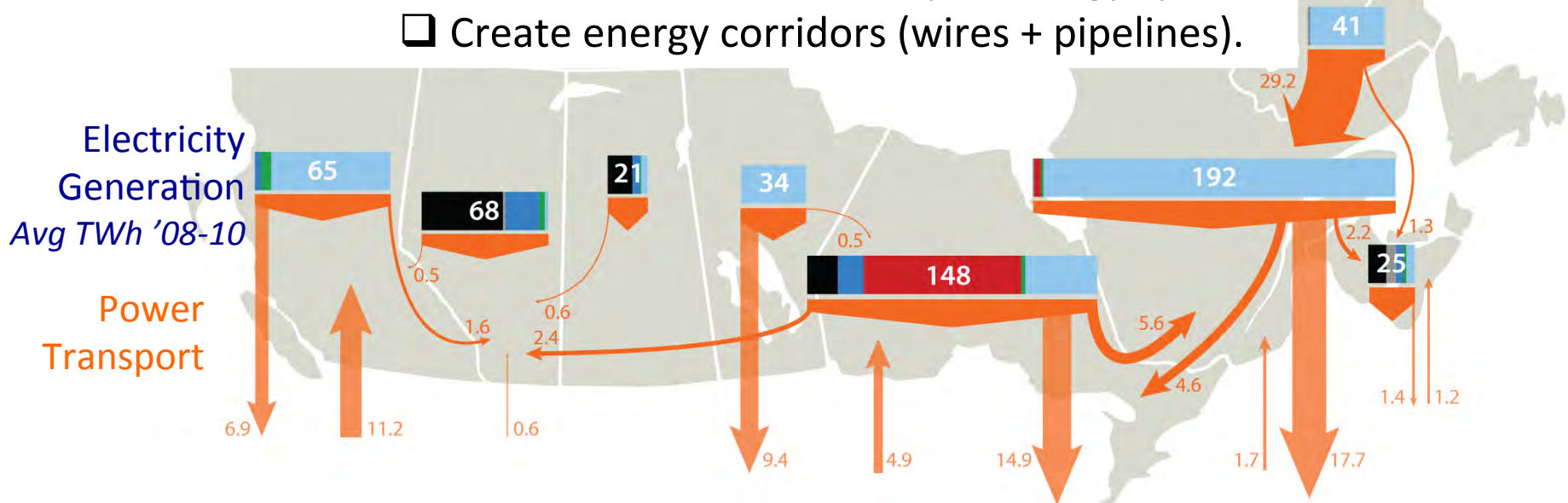


How much interprovincial trade in electricity is there today?

Most (~80%) of Current Cross-Border Power Trade is N-S, not EW

Benefits of Interprovincial Cooperation:

- Dramatically lower GHGs,
- Reduce air pollution & health costs;
- Large Hydro: excellent backup for wind & solar;
- Take advantage of time zone differences;
- Increase role for electricity in energy systems;
- Create energy corridors (wires + pipelines).



- ## Needs:
- E-W Grids
 - Better integration and cooperation
 - Policies