

Fresh Energy  
EV Policy Committee  
Findings and Policy Position

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Minnesota Public Utilities Commission  
November 2, 2012

# Fresh Energy's EV Policy Committee

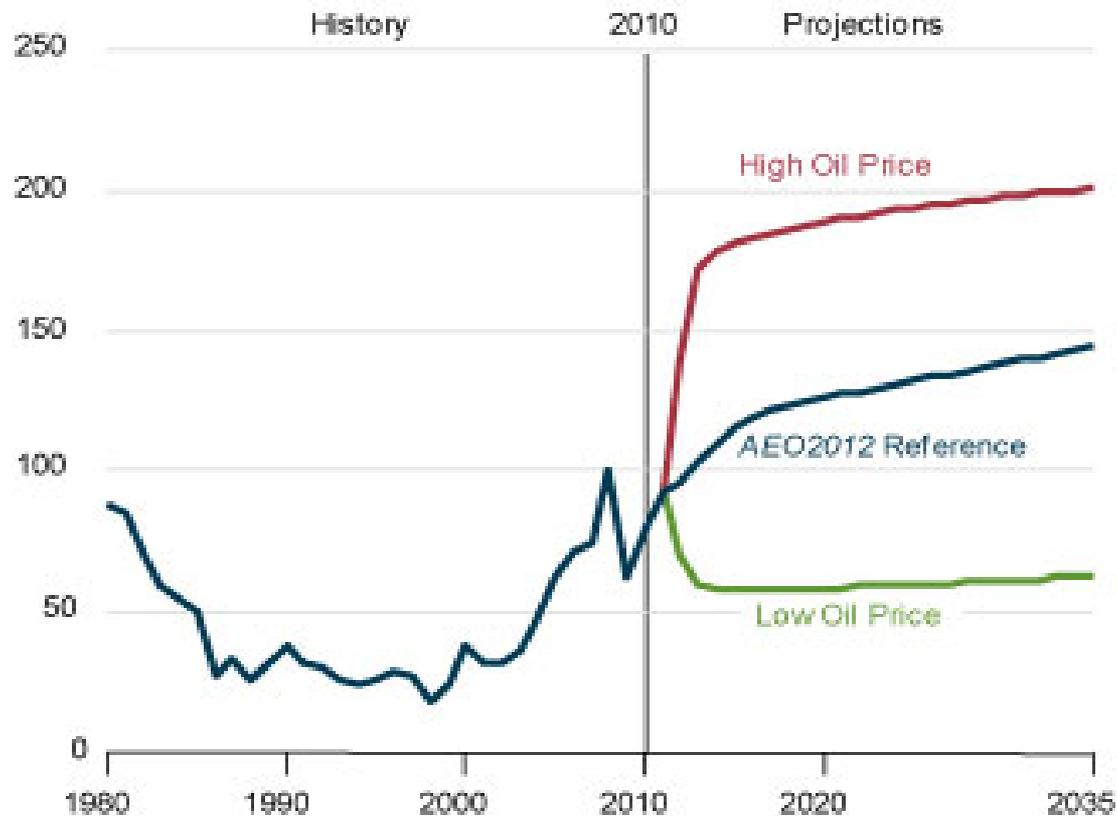
- July 2011 – January 2012
- Twelve members, incl.
  - President and CEO of NSP Minnesota
  - President of Saxon Ford (dealership)
  - Midwestern GM of Iberdrola Renewables (wind)
- Six outside experts
- 500+ pages of material

# Findings: EVs are coming

With major tech hurdles  
cleared, EV adoption  
is now inevitable

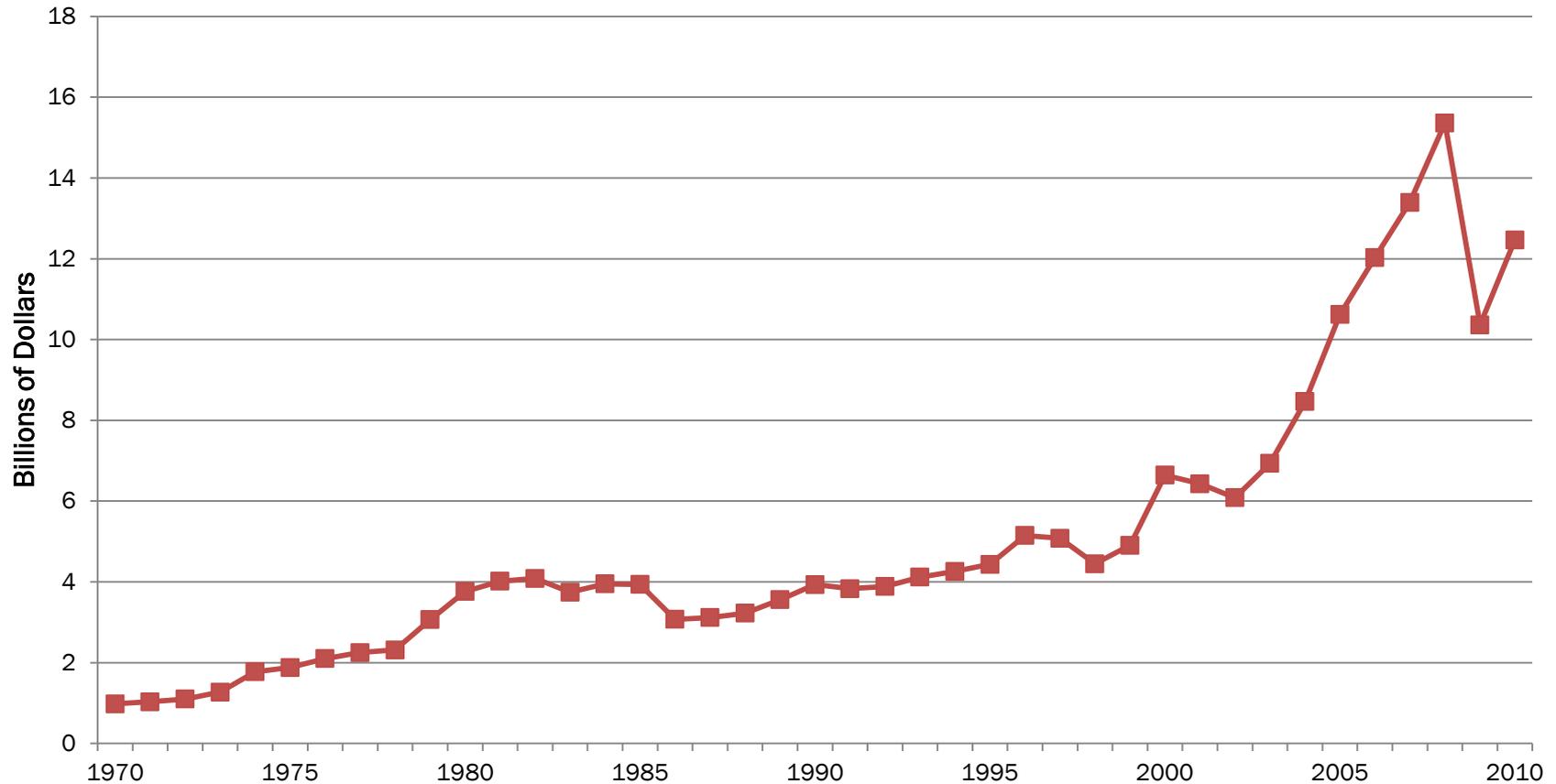
# Oil cost trends

Figure 5. Average annual world oil prices in three cases, 1980-2035 (real 2010 dollars per barrel)

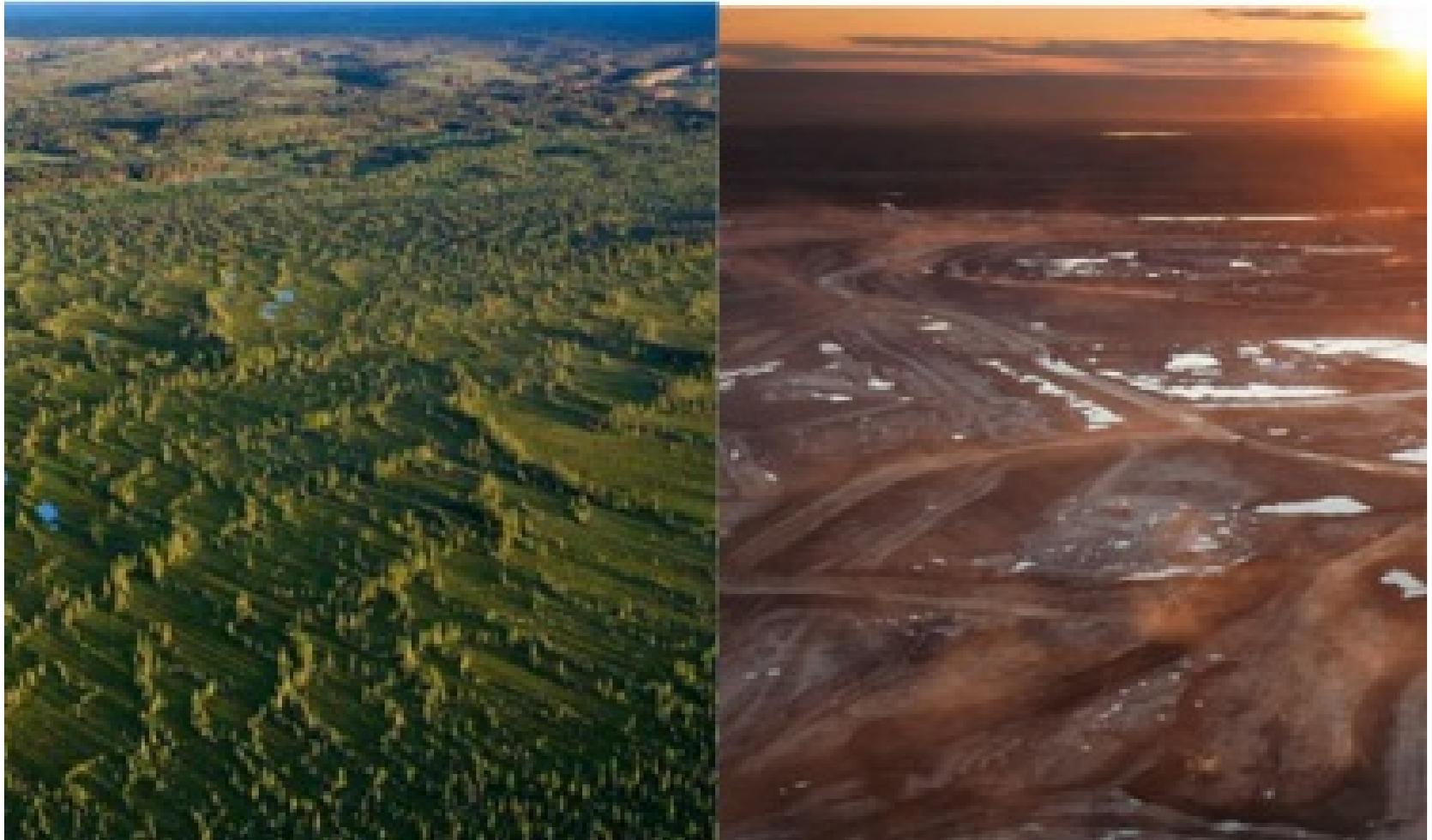


# How much does Minnesota spend on oil?

In recent years, Minnesota has “exported” about \$2,000 per person per year for oil.

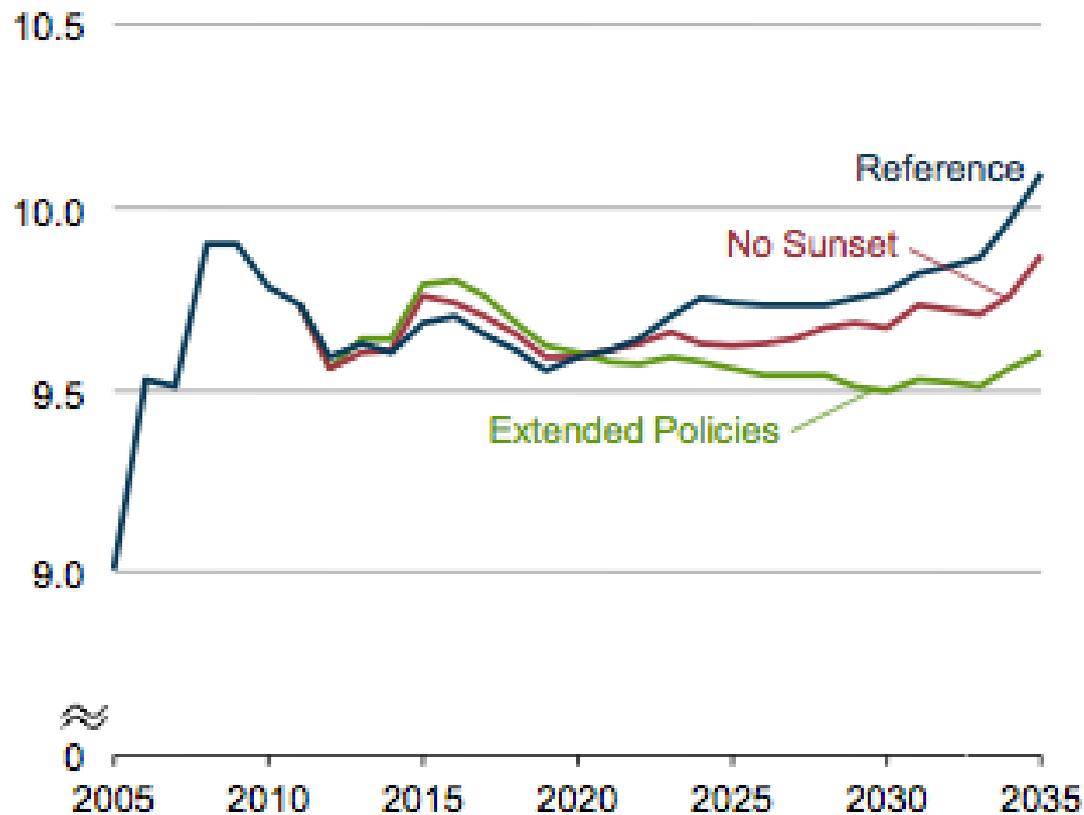


# Source of 83% of Minnesota's refined fuels



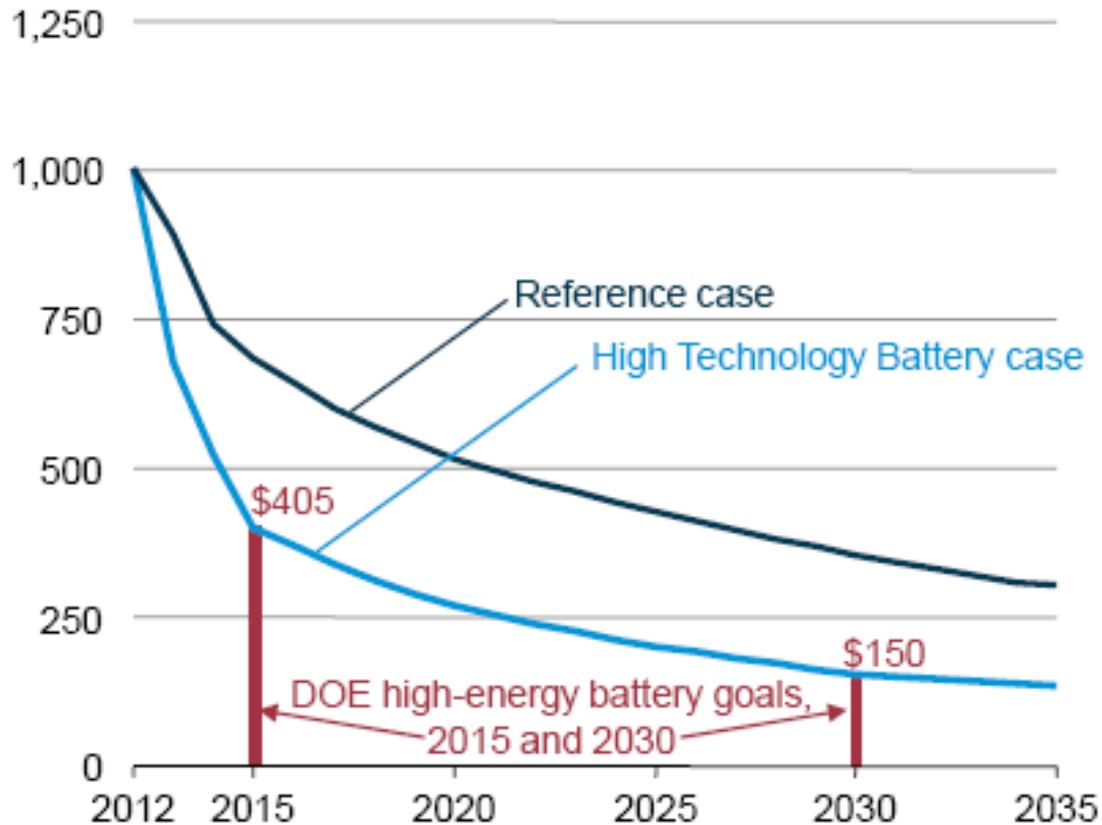
# Electricity cost trends

Figure 17. Average electricity prices in three cases, 2005-2035 (2010 cents per kilowatthour)



# EV battery costs are dropping fast

**Figure 27. Cost of electric vehicle battery storage to consumers in two cases, 2012-2035  
(2010 dollars per kilowatthour)**



# Findings: Broad public benefits

- Improved energy efficiency
- Lower, more predictable operating costs
  - 11¢ / kWh  $\approx$  \$1 / gal
- Reduced dependence on oil
- Reduced air pollution
- Reduced GHG emissions

# Findings: Broad public benefits

Every kWh used by EVs  
generates public benefit

# Findings: Electricity sector benefits

- Use more electricity in a balanced and efficient way
- Harmonizes with wind and solar
- Adds storage and flexibility to the grid
- Side benefits of distribution upgrades
- Downsides of inaction

# Fresh Energy Policy Positions

Transition to EVs will be  
driven by market competition  
. . . but smart public policy is  
essential to maximize public  
benefit

## In the Midwest, states should (1/2):

- **Encourage and enable adoption of EVs**
- **Encourage and enable usage of EVs**
- **Encourage and enable electric fueling**
- **Enable a variety of private-sector business models**
- **Make cost savings simple, transparent, obvious**

# The competition



## In the Midwest, states should (2/2):

- **Make emissions benefits visible to EV owners and the public**
  - **Dedicated EV meter**
- **Create incentives for off-peak charging**
- **Make connection between EVs and clean energy**
- **Allow utilities to recover costs for required upgrades**
- **As technology matures, use vehicle-to-grid services to increase the value of EV batteries**

Q & A

[www.fresh-energy.org](http://www.fresh-energy.org)