



**Constellation Energy®**

# Emissions Trading



The way energy **works.™**

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# Four Challenges for U.S. Energy Policy

- 1. Reduce air pollution and greenhouse gas emissions**
- 2. Maintain U.S. competitiveness in the global economy**
- 3. Reduce dependence on foreign sources of energy**
- 4. Wisely invest \$1.5 to \$2 trillion expected capital spend over next 20 years**



# Incentives and Mandates in Place

## Renewable or Low Carbon Power Portfolio

31 States & DC;  
500% increase to date;  
Fed government help

## Generation Incentives

Source	ITC	PTC
Wind	30%	\$22/MWh
Solar	30%	\$22/MWh
Biomass	30%	\$22/MWh
Geothermal	30%	\$22/MWh
CHP	30%	--
Fuel Cells	30%	--
Nuclear	--	\$18/MWh
Microturbines	10%	--
Landfill Gas/ Muni Solid Waste/ Hydro	--	\$11/MWh

## Fed Gov't Ops

(bigger than most countries)  
30% efficiency;  
20% renewable fuel use by 2015

## CATR and NAAQS

\$40+ billion advantage to non-fossil sources

## Accelerated HCFC Phaseout

More reduction than Kyoto; includes developing countries

## Building Codes

Fed government urging states to adopt new 30% model code

## Lighting Efficiency

+25-30% by 2012-2014;  
+70% by 2020

## Appliance Efficiency

+45 new standards

## Renewable Fuels

+500% by 2022;  
avoid 36B gal gas/yr;  
~15% supply

## Vehicle MPG

+40% by 2020;  
35 mpg;  
avoid 8.5B gal gas/yr;  
~5% supply

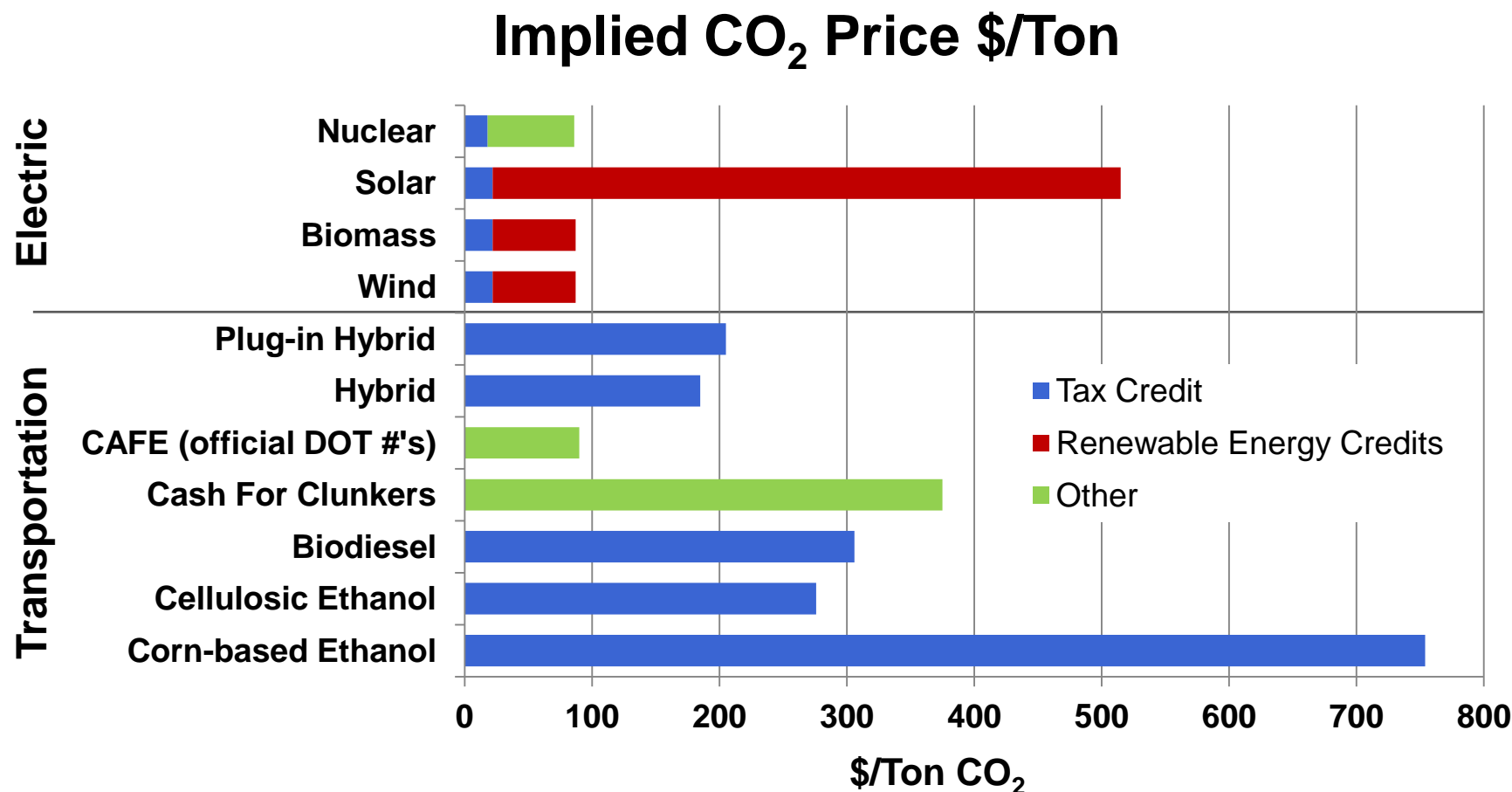
## Fuels Incentives

Fuel Type	Tax Credit/ Gal	Cost of Credit/ 125k BTU	Consumption Attributable to Credit	Gals Req'd/ MtCO2 Reduction	Taxpayer Cost/ MtCO2e Reduction
Cellulosic Ethanol	\$1.01	\$1.41	47%	92	\$276
Ethanol	\$0.45	\$0.58	32%	424	\$754
Biodiesel	\$1.00	\$0.96	38%	120	\$306

Source: CBO July 2010 Study, *Using Biofuel Tax Credits to Achieve Energy and Environmental Policy Goals*



# Existing Public Policy Pays \$75-750/ton of CO<sub>2</sub> Reduced



## Notes:

- Nuclear “other” is federal loan guarantees
- Cash for clunkers assumes average subsidy of \$4,000 per vehicle. An alternative view of the program puts the marginal subsidy at \$24,000 per vehicle resulting in a \$2,200/ton implied CO<sub>2</sub> price.
- Biodiesel, Cellulosic Ethanol, and Corn-based Ethanol figures from CBO July 2010 Study, *Using Biofuel Tax Credits to Achieve Energy and Environmental Policy Goals*



# Regional Mandatory GHG Reporting Programs

*Note: Manitoba is a partner in the WCI and  
Midwestern Accord. Kansas is a partner in  
the Midwestern Accord and observer of the  
WCI. Ontario is a partner in the WCI and  
observer of the Midwestern Accord.*

- WCI Participants
- WCI Observers
- Midwestern Accord Participants
- Midwestern Accord Observers
- RGGI Participants

## Voluntary Reporting Programs

- The Climate Registry
- The Chicago Climate Exchange
- The Voluntary Reporting of Greenhouse Gases Program (1605(b) Program)
- Carbon Disclosure Project

