

FEDERAL GREENHOUSE GAS REDUCTION EFFORTS

The background of the slide is a dark blue-grey color. On the left side, there is a faint, light-colored compass rose with a needle pointing towards the top-left. To the right of the compass, there is a faint line graph with several peaks and valleys, representing data trends. The text is centered in the upper half of the slide.

TYPES OF GHG REDUCTION MECHANISMS

- ▶ ECONOMY-WIDE
- ▶ NARROWER SECTORAL OR INDUSTRY APPROACH
 - VEHICLE EMISSION STANDARDS
 - EPA REGULATION UNDER THE CAA
 - STANDARDS: LOW CARBON FUEL STANDARD, ENERGY EFFICIENCY STANDARD, RENEWABLE ENERGY STANDARD

TYPES OF GHG REDUCTION MECHANISMS

- ▶ COMMAND AND CONTROL
- ▶ MARKET BASED MECHANISMS

ECONOMY-WIDE APPROACH

- ▶ CARBON TAX OR FEE
- ▶ CARBON ALLOWANCE PROGRAM

GREENHOUSE GASES

- ▶ “THE CONSUMPTION OF ENERGY IN THE FORM OF FOSSIL FUEL COMBUSTION IS THE LARGEST SINGLE CONTRIBUTOR TO GREENHOUSE GAS EMISSIONS IN THE UNITED STATES AND THE WORLD.”

(EIA, NOVEMBER 2006)

ECONOMIC OBJECTIVES

- ▶ UNSUSTAINABLE

1. 85 MILLION BARRELS OF OIL PER DAY
2. 7 BILLION TONS OF COAL PER YEAR
3. 105 TRILLION CUBIC FEET OF NATURAL GAS PER YEAR

- ▶ LEADING TO EVER-INCREASING COSTS AND PRICE VOLATILITY

PRICE VOLATILITY = COST

- ▶ THE PRICE VOLATILITY ASSOCIATED WITH FOSSIL FUEL PRICES HAS "ENORMOUS ECONOMIC IMPACT. IT MAKES IT DIFFICULT TO PLAN FUTURE ENERGY INVESTMENTS AND CAN FUEL FUTURE RECESSIONS AND INFLATION."

ECONOMY – NATIONAL SECURITY CONNECTION

- ▶ US EXPENDITURES ON FOREIGN OIL IS \$1 BILLION PER DAY
- ▶ MILITARY COSTS ASSOCIATED WITH ENSURING ACCESS TO OIL
- ▶ DISTORTS US FOREIGN POLICY

GLOBAL COMPETITIVENESS

- ▶ US SOLAR PATENTS – > 40%
- ▶ MARKET SHARE/MANUFACTURING – 6% (DOWN FROM 28% IN 2000)
- ▶ CHINA – 29% (UP FROM 1% IN 2000)

- ▶ CHINA HAS DOUBLED THEIR WIND POWER CAPACITY EVERY YEAR FOR PAST 4 YEARS, NOW BEHIND ONLY U.S. AND GERMANY

- ▶ ESTIMATES FOR CHINA EXPENDITURES IN 2009 ON CLEAN ENERGY DEVELOPMENT RUN AS HIGH AS \$660 BILLION

- ▶ SUPERCRITICAL COAL PLANTS “CHINA HAS BECOME THE MAJOR WORLD MARKET FOR ADVANCED COAL-FIRED POWER PLANTS WITH HIGH-SPECIFICATION EMISSION CONTROL SYSTEMS.” (IEA 04/09)

CLEAN ENERGY ECONOMY

► ENERGY EFFICIENCY SAVINGS

- \$1.2 trillion in unnecessary spending, at a cost of \$520 billion, achieving 23% in energy savings by 2020 (McKinsey 2009)
- Dollars spent on energy efficiency produce more in the way of economic value than dollars spent on the energy sector
- In MT a 6% savings in energy would create 2,300 jobs and increase the State's GDP by \$51 million (Laitner 02/08)
- By 2020 clean energy legislation would create between 5,000 and 13,000 new jobs in MT and would increase household income by between \$600 and \$1700 (UC, UI, Yale 10/09)

COSTS FROM CLIMATE CHANGE

- ▶ DOMESTIC
- ▶ FOREIGN



CARBON TAX

▶ ADVANTAGES:

- SENDS PRICE SIGNAL
- IN CONCEPT, SIMPLE
- CAN BE IMPOSED UPSTREAM IN THE FOSSIL FUEL SUPPLY AND DISTRIBUTION CHAIN
- ONCE TAX IS ESTABLISHED CERTAINTY AS TO WHAT IT WILL COST, WHICH AIDS IN PLANNING
- REVENUE—WHAT TO DO WITH IT

▶ DISADVANTAGES

- IN REALITY, LIKELY TO BE NOT SO SIMPLE
- NO CERTAINTY AS TO LEVEL OF EMISSION REDUCTIONS
- ONCE TAX RATE ESTABLISHED, DIFFICULT TO CHANGE
- PROBABLY POLITICALLY INFEASIBLE
- REVENUE—WHAT TO DO WITH IT

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REVENUE

- ▶ WHAT TO DO WITH THE REVENUE?
- ▶ AN ISSUE IN ANY MECHANISM THAT CONSTRAINS EMISSIONS AND GIVES VALUE TO THE RIGHT TO EMIT (SCARCITY RENT)
- ▶ THINGS TO CONSIDER:
 - REGRESSIVITY
 - REGIONAL DIFFERENCES
 - TRADE-EXPOSED INDUSTRIES
 - FUNDING FOR PROGRAMS THAT WILL HELP ACHIEVE THE OBJECTIVES OF THE PROGRAM: REDUCING EMISSIONS AND BUILDING A CLEAN ENERGY ECONOMY

▶ CAP AND TRADE

▶ AND



CAP AND DIVIDEND

CAP AND DIVIDEND

- ▶ A CARBON TAX WITH A CAP
 - SET NUMBER OF ALLOWANCES (RIGHT TO POLLUTE)
 - NUMBER OF ALLOWANCES DECLINES
 - UPSTREAM ENTITIES – THOSE THAT BRING CARBON INTO THE ECONOMY – HAVE TO PROCURE ALLOWANCES SUFFICIENT TO COVER THE AMOUNT OF CARBON IN THEIR PRODUCTS
 - ALLOWANCES ARE AUCTIONED, ESTABLISHING A MARKET PRICE FOR CARBON
 - COST OF ALLOWANCES IS A PROXY FOR THE TAX RATE
 - ADDED COST THAT IS ATTACHED TO CARBON FLOWS THROUGH THE ECONOMY – ENERGY PRICES RISE
 - CONSUMERS ARE COMPENSATED, IN PART, FOR THIS ADDED COST, BY DIVIDEND PAYMENTS FROM AUCTION PROCEEDS, ON A PER CAPITA BASIS

CAP AND DIVIDEND PARTICULARS

- ▶ ADDRESSES REGRESSIVITY ISSUE
- ▶ IN ITS PURE FORM AND IN ONE RESPECT IT'S SIMPLIER THAN A CAP AND TRADE SYSTEM, WHICH REGULATES EMITTERS
- ▶ IN ITS PURE FORM, DOESN'T ADDRESS REGIONAL DISPARATIES
- ▶ IN ITS PURE FORM, DOESN'T ADDRESS VULNERABLE INDUSTRIES
- ▶ IN ITS PURE FORM, DOESN'T FUND CLEAN ENERGY DEVELOPMENT

CAP AND TRADE

- ▶ CAP AND TRADE ALSO ACHIEVES EMISSION REDUCTIONS BY THE ISSUANCE OF A DECLINING NUMBER OF ALLOWANCES
- ▶ CAP AND TRADE IMPOSES THE COMPLIANCE OBLIGATION ON EMITTERS (OVER 25,000 TONS CO₂)
- ▶ USE OF OFFSETS
- ▶ MARKET PARTICIPATION
- ▶ PRINCIPAL DIFFERENCE IS THAT UNLIKE CAP AND DIVIDEND, WHICH HAS AS ITS CENTRAL FEATURE AUCTIONING ALL (OR ALMOST ALL) OF ALLOWANCES AND DISTRIBUTING ALL THE ALLOWANCE VALUE (OR ALMOST ALL ALLOWANCE VALUE) TO THE PUBLIC ON A PER CAPITA BASIS, CAP AND TRADE DOESN'T NECESSARILY INCLUDE THESE FEATURES

H.R. 2454 AND S. 1733

▶ SIMILAR ARCHITECTURE:

- ALLOWANCES WITH A DECLINING CAP
- 85% OF GHG EMISSIONS COVERED
- MIXTURE OF ALLOCATION AND AUCTION, MORE ALLOWANCES GIVEN AWAY IN THE EARLY YEARS OF THE PROGRAM, PHASING OUT OVER TIME
- ALLOWANCE FOR OFFSETS, INCLUDING INTERNATIONAL OFFSETS
- PRICE FLOOR AND CEILING
- MARKET OVERSIGHT PROVISIONS
- COMPLEMENTARY MEASURES

USE OF ALLOWANCE VALUE

- ▶ FOR THE BENEFIT OF CUSTOMERS OF ELECTRIC AND NATURAL GAS LDCs
- ▶ DIRECT AID TO LOW-INCOME HOUSEHOLDS
- ▶ ECONOMICALLY AND TRADE SENSITIVE INDUSTRIES
- ▶ VARIOUS ENERGY AND ENVIRONMENTAL POLICY PURPOSES:
 - RENEWABLE ENERGY RESEARCH AND DEVELOPMENT
 - ENERGY EFFICIENCY
 - CCS
 - NATURAL RESOURCE ADAPTATION
- ▶ IN THE LATER YEARS OF THE PROGRAM:
 - PER-CAPITA TAX REBATES
 - DEFECIT REDUCTION

ALLOWANCES TO LDCs

- ▶ BOTH BILLS GIVE ELECTRIC AND NATURAL GAS LDCs ALLOWANCES
- ▶ MORE THAN 40% OF ALL ALLOWANCES FROM THE YEARS 2012 TO 2025 GO TO LDCs
- ▶ INDIVIDUAL ELECTRIC LDCs RECEIVE ALLOWANCES BASED ON A 50-50 SPLIT BETWEEN EMISSIONS AND SALES – THIS IS INTENDED TO ADDRESS THE FACT THAT SOME REGIONS USE MORE CARBON INTENSIVE FORMS OF ENERGY THAN OTHERS FOR ELECTRICITY PRODUCTION
- ▶ LDCs ARE SUBJECT TO COST-BASED REGULATION, WHICH MEANS THAT THESE LDCs CAN ONLY CHARGE CUSTOMERS WHAT IT COSTS TO PROVIDE THE SERVICE (PLUS A REASONABLE RATE OF RETURN)
 - LDCs ARE REGULATED BY STATE UTILITY COMMISSIONS IN THE STATE IN WHICH THEY OPERATE
- ▶ BOTH BILLS REQUIRE THAT LDCs USE THE ALLOWANCES THEY ARE GIVEN FOR THE BENEFIT OF THEIR CUSTOMERS

ALLOWANCE VALUE TO CUSTOMERS

- ▶ SO, LDCs CUSTOMERS WILL RECEIVE MONEY
- ▶ TRADE-OFF:
 - GIVING ALLOWANCES TO LDCs AND ALLOWING CUSTOMERS TO RECEIVE MONEY DIRECTLY FROM THE LDC WEAKENS THE PRICE SIGNAL – THIS LOWERS OVERALL ECONOMIC EFFICIENCY, MEANING THAT THE PROGRAM COSTS MORE THAN IT WOULD IF ECONOMIC EFFICIENCY WAS OPTIMIZED
 - PROVIDING CUSTOMERS TRANSITIONAL RELIEF – PARTICULARLY IN THE EARLY YEARS OF THE PROGRAM – FROM INCREASED ENERGY COSTS
- ▶ WAYS TO MAKE THE DISTRIBUTION OF ALLOWANCE VALUE TO CUSTOMERS MORE EFFICIENT
- ▶ DETAILS MATTER

Illustration of Scarcity Rent and Abatement Cost

