Multisolving co-benefits for En-ROADS

Energy Supply

Coal
Taxing reduces air and water pollution, improving community and ecosystem health.

Renewables
Subsidizing reduces air & water pollution, improves health, productivity, savings, energy access, and job opportunities.

Oil
Taxing reduces chance of harmful oil spills. Improves national security & lowers military costs.

Nuclear
Taxing reduces risk of exposure to radiation from nuclear meltdown or hazardous waste. Protects health of uranium miners.

Natural Gas
Taxing improves water security & quality, protects wildlife and biodiversity.

New Zero Carbon
Research advancements in new technologies can create jobs and may be useful for other applications.

Bioenergy
Taxing frees land for food production. Improves water & air quality, protects habitats.

Carbon Price
Improves air quality, healthcare savings, & worker productivity. Makes renewable energy relatively cheaper. Funds can be earmarked for social programs.

Transport

Energy Efficiency
Increasing lowers energy costs. Improves public transit reduces traffic congestion & noise. Biking & walking increases physical activity & health savings.

Electrification
Increasing creates jobs in manufacturing & sales of electric batteries & engines. Improves air quality at the source, increasing health savings & worker productivity.

Buildings & Industry

Energy Efficiency
Increasing reduces energy demand & cost. Improves indoor air quality & health outcomes. Creates weatherization jobs.

Electrification
Increasing reduces noise pollution from motor engines, generators, & furnaces. Lowers energy costs. Improves indoor and outdoor air quality.

Growth

Population
Access to family planning, reproductive services, & education enhances quality of life for women.

Economic Growth
Low growth shifts focus from material consumption to alternative measures of wellbeing such as gross national happiness.

Land and Industry Emissions

Deforestation
Reducing decreases erosion, protects biodiversity, ecosystems, & food sources. Preserves small-scale resource gathering & sustainable forestry livelihoods.

Methane & Other
Reducing improves water pollution & protects marine habitats. Plant-based diets are healthier for individuals and ecosystems.

Carbon Removal

Afforestation
Increasing creates jobs in tree planting & care. Urban tree canopies reduce urban heat island effect which conserves energy.

Technological
Growth in nature-based carbon removal approaches like agricultural soil sequestration may help improve small-holder and farmer profits.

CLIMATE INTERACTIVE

Equity Considerations for En-ROADS

Energy Supply

Coal
Taxing raises energy costs. Low-income individuals rely on coal jobs yet suffer the most negative impacts of its production.

Renewables
Many developed countries limit subsidy programs to homeowners. Poorer communities remain unable to access the technology.

Oil
Industry protections must be eliminated. Essential to provide low skill and high skill workers new job pathways.

Nuclear
Plants, mines, & waste sites often located in low-income areas that lack resources to advocate for stricter regulations

Natural Gas
Poor communities & communities of color disproportionately experience negative impacts of drilling and burning.

New Zero Carbon
There are unknown consequences and risks associated with new energy sources.

Bioenergy
Subsidizing may accelerate deforestation and can negatively impact farmer livelihoods by shifting agriculture markets.

Carbon Price
Fossil fuel workers risk losing their jobs. Higher costs may be passed on to consumer. Companies can find loop holes or exemptions due to corruption & rent-seeking.

Transport

Energy Efficiency
High-quality pedestrian & cycling infrastructure is often concentrated in wealthier, white communities. Improved public transportation can improve social equity.

Electrification
Electric vehicles and charging stations are not affordable or available to everyone. Lithium and copper mining severely harms ecosystems.

Buildings & Industry

Energy Efficiency
High up-front costs of efficiency improvements. Policies often directed to property owners, inhibiting low-income renters from accessing the benefits.

Electrification
High up-front costs of switching energy systems to electric. Household air pollution is unevenly distributed within and across countries

Growth

Population
Policies around limiting population growth should be voluntary, accessible, & empower women to make the choices that are best for them.

Economic Growth
Gains in growth have gone to the world's wealthiest in recent decades. Policies must be tailored to specific local and regional circumstances.

Land and Industry Emissions

Deforestation
Preservation efforts have restricted the access of Indigenous people who have lived sustainably on the land for generations. Policies to reduce deforestation need local stakeholder engagement.

Methane & Other
Cultural values attached to certain foods. Policies to reduce methane & other gases may decrease food security. Local economies and employment that rely on industrial agriculture can be threatened.

Carbon Removal

Afforestation
Large shifts in land can compromise historic land access. Policies to grow afforestation should avoid creating monocultures of trees that are all the same species & age.

Technological
Many approaches have not yet been developed at scale and growing technological removal poses unknown risks and consequences to the communities they are situated within.

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