

# Climate Policy Initiative

## Key Facts and Policy Implications: China

- Because China is a net consumer of oil, the two degree pathway to transition away from oil as projected by the IEA, with the right policies, can lead to a net benefit to the financial system of more than \$1 trillion. China and other net consuming countries (which together comprise three-fourths of global oil demand) would benefit from a combination of pricing and innovation policies to reduce demand for oil.
- China's public sector owns 75-90% of the nation's fossil fuel assets.
- Of China's coal-fired power plants that are planned or under construction, 78% (representing 378 GW) are above the threshold described in an IEA two degree scenario. This extra capacity can lead to lock-in or asset stranding. Minimizing value loss in the transition will require even more aggressive substitution of coal-fired power with lower-carbon energy.
- Globally, coal could contribute approximately 80% of the IEA's projected carbon savings in the two degree scenario with only 12% of the potential stranding risk. Almost half of these carbon savings from coal would come from China.
- Natural gas could be an important substitute for coal to meet electricity demand in the short term. However, global consumption of natural gas will need to peak in 2030 to minimize value loss in an IEA two degree transition scenario.

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Full Report: "Moving to a Low-Carbon Economy" at <http://climatepolicyinitiative.org/publication/moving-to-a-low-carbon-economy/>

CPI analysis is based on the IEA's BAU and 450 ppm scenarios.



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## Key Facts and Policy Implications: European Union

- Because the EU is a net consumer of oil, the two degree pathway to transition away from oil as projected by the IEA, with the right policies, can lead to a net benefit to the financial system of more than \$1 trillion. The EU and other net consuming countries (which together comprise three-fourths of global oil demand) would benefit from a combination of pricing and innovation policies to reduce demand for oil.
- In Europe, the cost of renewable energy is higher than necessary because of the cost of financing and current industry structure. New business and financial models and instruments that are better suited to investor needs can reduce the cost of renewable energy by up to 20%.
- Government ownership of fossil fuel assets varies widely across fossil fuels and across EU member states. Governments own the majority of upstream coal assets (primarily in Poland, Greece, and Germany), approximately 40% of coal-fired power plants, and a smaller share of oil, natural gas, and gas-fired power plants.
- Existing regulations, as well as retiring coal-fired plants at the end of their natural lives, would put the EU largely on track to achieve levels consistent with 450 ppm without losing significant asset value. As long as there is no incremental investment in existing plants or building of new coal plants, the EU has little to lose from a transition away from coal power. The total value at risk is under \$3 billion — less than 2% of EU power plant investments in 2011 alone. Good electricity market design could preserve the value of the remaining coal plants by paying them to provide flexible generation to balance out renewable energy.
- The EU is a net importer of natural gas and thus faces little stranding risk associated with gas production. Globally, natural gas will need to peak around 2030 to minimize value loss in an IEA two degree transition scenario.

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## Key Facts and Policy Implications: India

- Because India is a net consumer of oil, the two degree pathway to transition away from oil as projected by the IEA, with the right policies, can free up significant financial capacity, which can then be used to support development goals. India and other net consuming countries (which together comprise three-fourths of global oil demand) would benefit from a combination of pricing and innovation policies to reduce demand for oil.
- India's national and state governments own approximately 45-75% of fossil fuel assets. State ownership is highest for oil and lowest for gas-fired power plants.
- Of India's coal-fired power plants that are currently planned or under construction, 77% (representing 318 GW) are above the threshold described in an IEA two degree scenario. This extra capacity can lead to lock-in or asset stranding, which can be a drain on India's financial system and affect funding for development goals.
- Meeting the nation's growing energy demand as well as maximizing financial capacity to meet development goals will require aggressive substitution of coal-fired power with lower-carbon energy. An all-of-the-above strategy to improve energy efficiency as well as continue to accelerate solar, wind and biofuel energy, will help India achieve both its energy and development goals.
- India already has ambitious solar and wind plans. Reducing the cost of low-carbon power can help achieve these goals. In particular, long-term, low-cost debt can reduce the cost of low-carbon power by 30%.

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## Key Facts and Policy Implications: United States

- Because the U.S. is a net consumer of oil, the two degree pathway to transition away from oil as projected by the IEA can, with the right policies, lead to a net benefit to the financial system of more than \$300 billion. Within this transition, innovation policies are particularly important. The U.S. and other net consuming countries (which together comprise three-fourths of global oil demand) would benefit from a combination of pricing and innovation policies to reduce demand for oil.
- The large majority of fossil fuel assets in the U.S. are privately owned. Governments (including municipal utilities) own approximately 20% of coal-fired power plants in the U.S., a slightly smaller share of gas-fired power plants, and little oil, coal, or natural gas assets.
- In the U.S., the cost of renewable energy is higher than necessary because of the cost of financing and current industry structure. New business and financial models and instruments that are better suited to investor needs can reduce the cost of renewable energy by up to 20%.
- Existing regulations, as well as retiring coal-fired plants at the end of their natural lives, would put the U.S. on track to achieve levels consistent with 450ppm without losing significant asset value. Good electricity market design could preserve the value of the remaining coal plants by paying them to provide flexible generation to balance out renewable energy.
- Although natural gas has a short-term future as a bridge fuel, global natural gas usage must peak around 2030 to minimize value loss in an IEA two degree transition path. After 2030, approximately \$300 billion in U.S. natural gas asset value is at risk in the low-carbon transition.

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