



# Analyzing Foreign and Domestic Policy to Determine a Pathway to Achieving the US' NDC with a Focus on Advanced Reactors and Hydrogen

August 2022

*Changing the World's Energy Future*

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**Prepared for the  
U.S. Department of Energy  
Under DOE Idaho Operations Office  
Contract DE-AC07-05ID14517**



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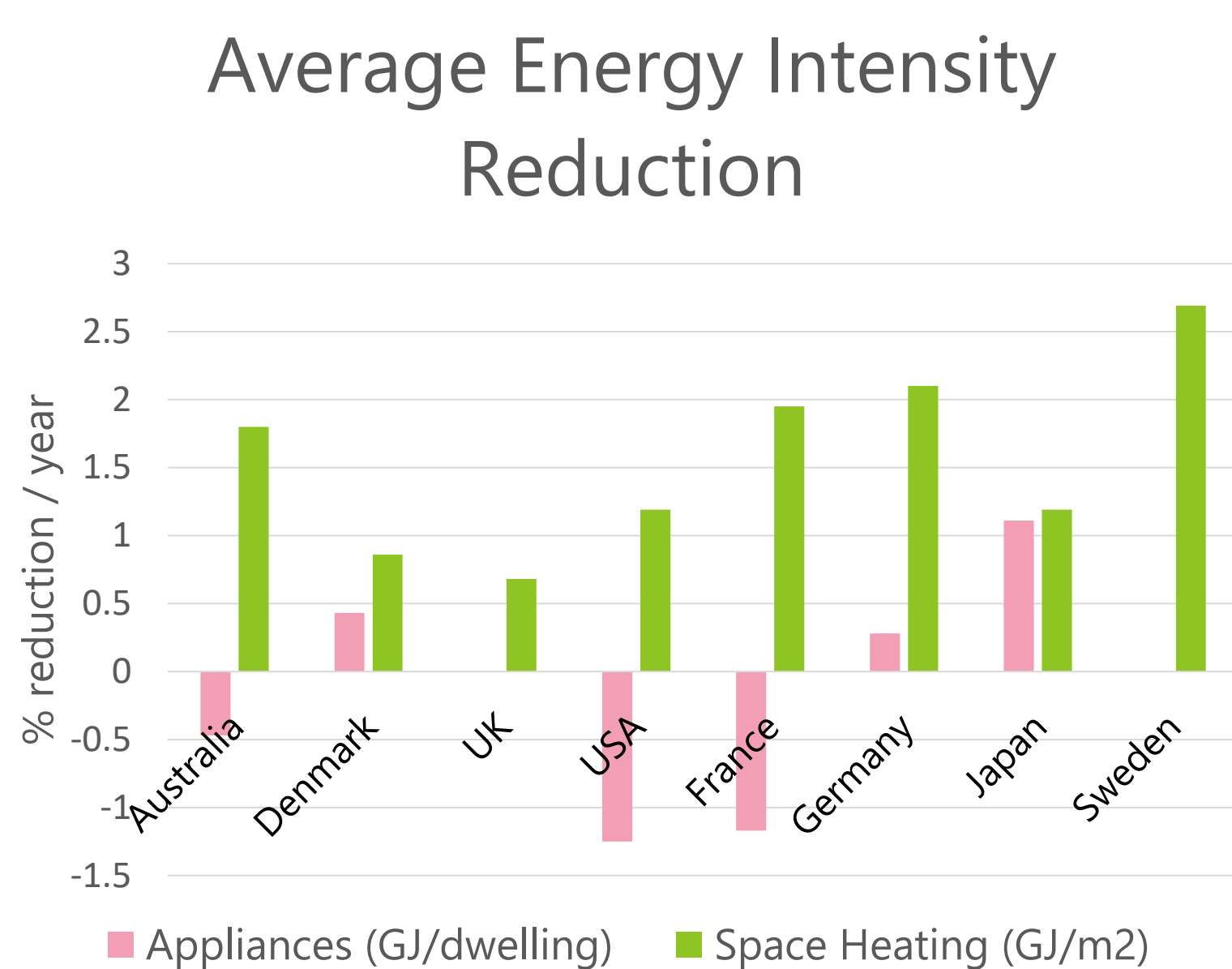
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The United States recently set out a nationally determined contribution(NDC) with a goal to achieve 50% emissions reductions in 2030 compared to 2005, representing a 1,868.5 MtCO<sub>2</sub> reduction from 2021. Current US policy does not put us on a track to achieve this goal. However, by analyzing global policy and determining the most ambitious policies in each sector, a pathway for the US to meet 50% emissions reductions can be created. The most significant policies are discussed below.

## Efficiency

Stricter appliance standards like in Japan and mandatory building codes as used in Sweden and Germany can improve US building efficiency.



Furthermore, electric vehicle adoption in the US is hindered by a 200,000-car limit for manufacturers to receive subsidies. Removing this constraint will level the playing field and further the transition to EV. Finally, as is done in Denmark, mandatory energy audits can reduce energy intensity in industry.

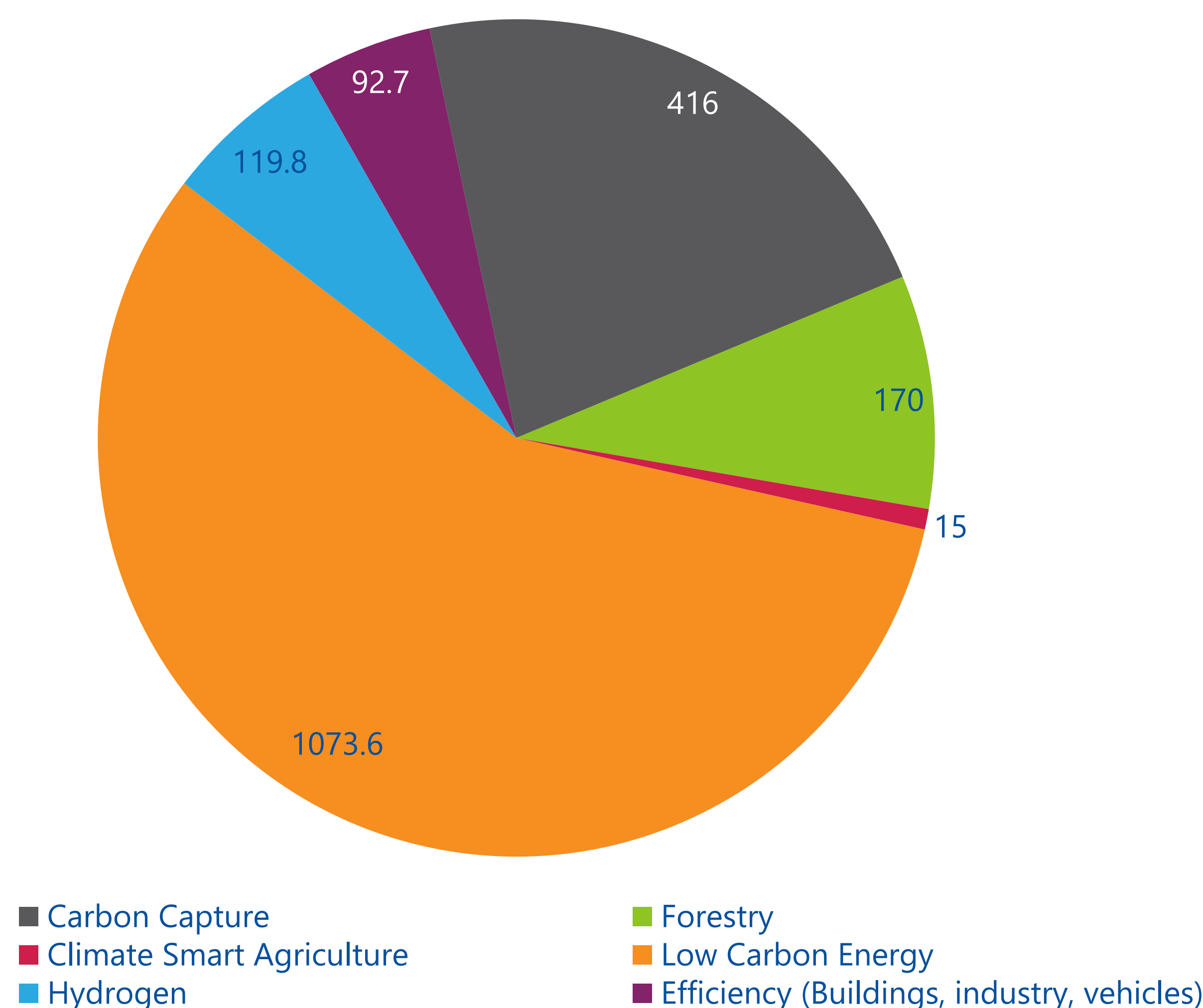
## Hydrogen

Development of hydrogen hubs can help make innovation cheaper. As seen in Canada, a focus on production is essential. As demand-side technology reaches the commercial level, hydrogen needs to be cheap for industry to consider using it over fossil fuels. Excess hydrogen can be blended in natural gas pipelines up to 20% without infrastructure changes, as Australia plans to do.

## Renewables

The UK and Germany have seen impressive progress in renewable growth by switching from flat subsidies to renewable auctions. These drive down costs while continuing to promote growth. Germany even saw some subsidy auctions reach \$0 bids. Adopting auctions in the US can drive affordable renewable development.

## Emissions Reductions from 2021 to 2030 (MtCO<sub>2</sub> per year)



Net decrease in CO<sub>2</sub> emissions in major US sectors achieved between 2021 and 2030 assuming policies discussed are enacted

## Carbon Capture

The carbon capture tax credit has already driven many project announcements, and a larger credit could increase development even faster. Allowing smaller firms to receive the subsidy would also help development. One area that lacks support is transmission. In the UK, up-front funding is given to first developers to help alleviate FOAK costs. Doing this in the US will ensure projects can transport carbon to storage sites. Regulated rates of use for transmission can also be developed to prevent monopolistic practices.

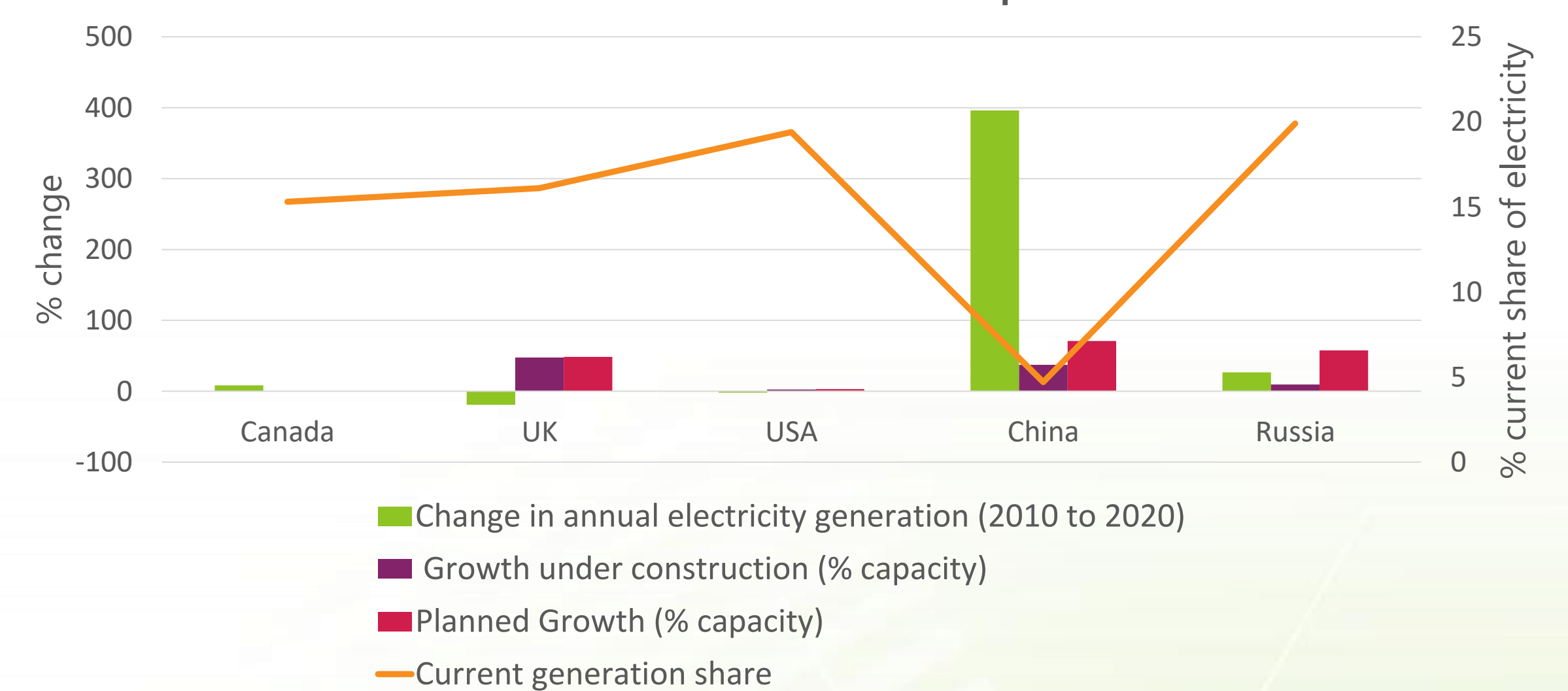
## Forestry

As seen in China, financial incentives for tree planting can be highly effective. Subsidies for seedlings, planting, and post planting measures can collectively boost the rate of afforestation in the US.

## Climate Smart Agriculture

Climate smart agriculture(CSA) is a broad assortment of practices that improve on efficiency compared to conventional farming, with the bonus of helping to reduce emissions. The USDA's plan to implement CSA is effective. By using a flexible approach, the most efficient practices can be determined at a local level. In this sector, effectiveness of practices vary greatly, so adaptability is key.

### Global Nuclear Development



Recent and planned nuclear plants constructed as a percent of current capacity and percent of total electricity generated from nuclear.

## Acknowledgements

Special thanks to the DOE SULI program for giving me the opportunity to do this research and to my mentor Dr. Piyush Sabharwall for all the guidance he has provided throughout the project.