

## 2-2. Energy Demand

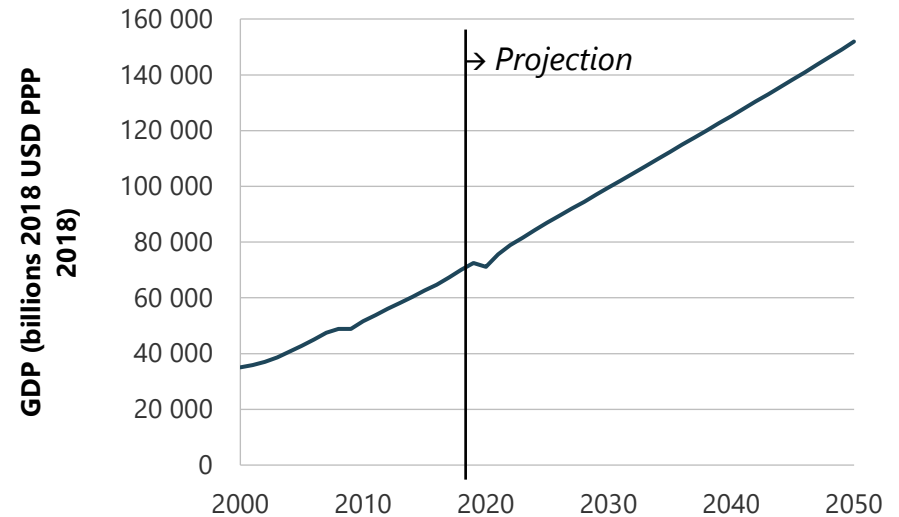
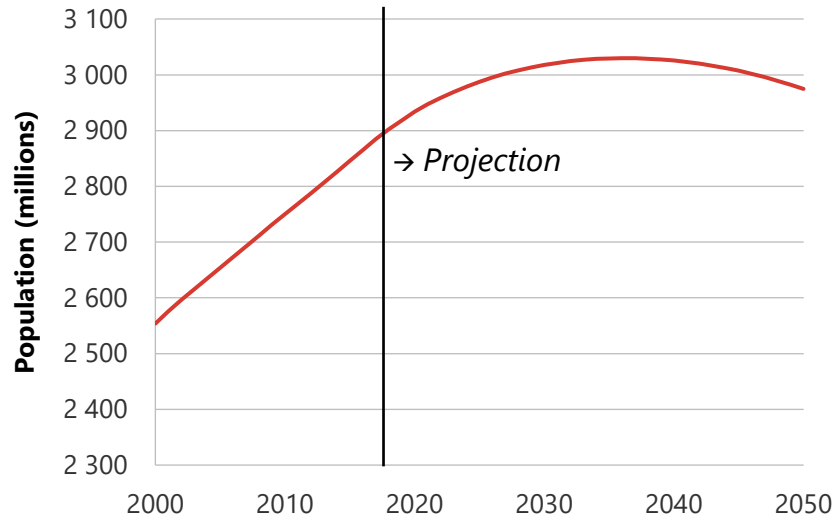
### **APERC Workshop**

The 62<sup>nd</sup> Meeting of APEC Energy Working Group (EWG)  
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# APEC population and GDP assumptions

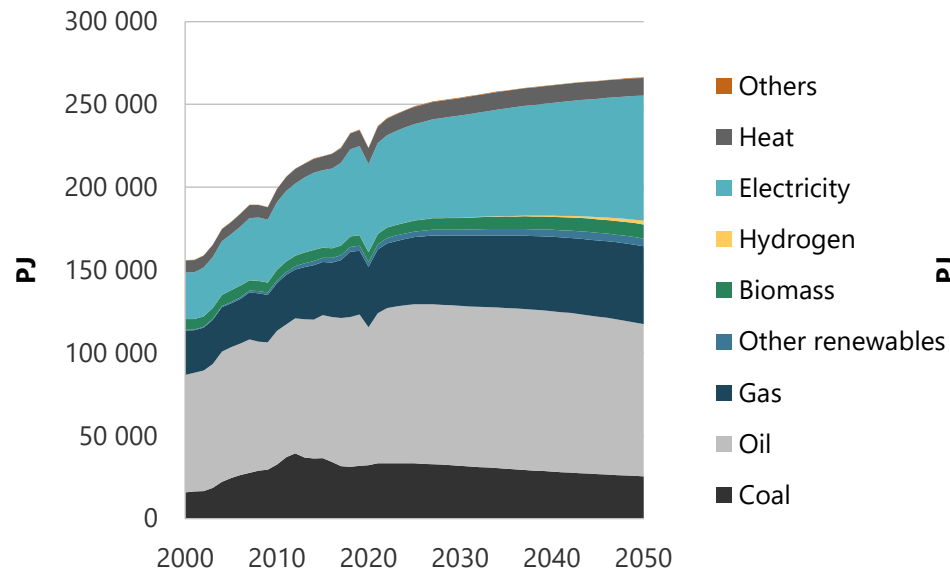


Sources: APERC analysis (2021).

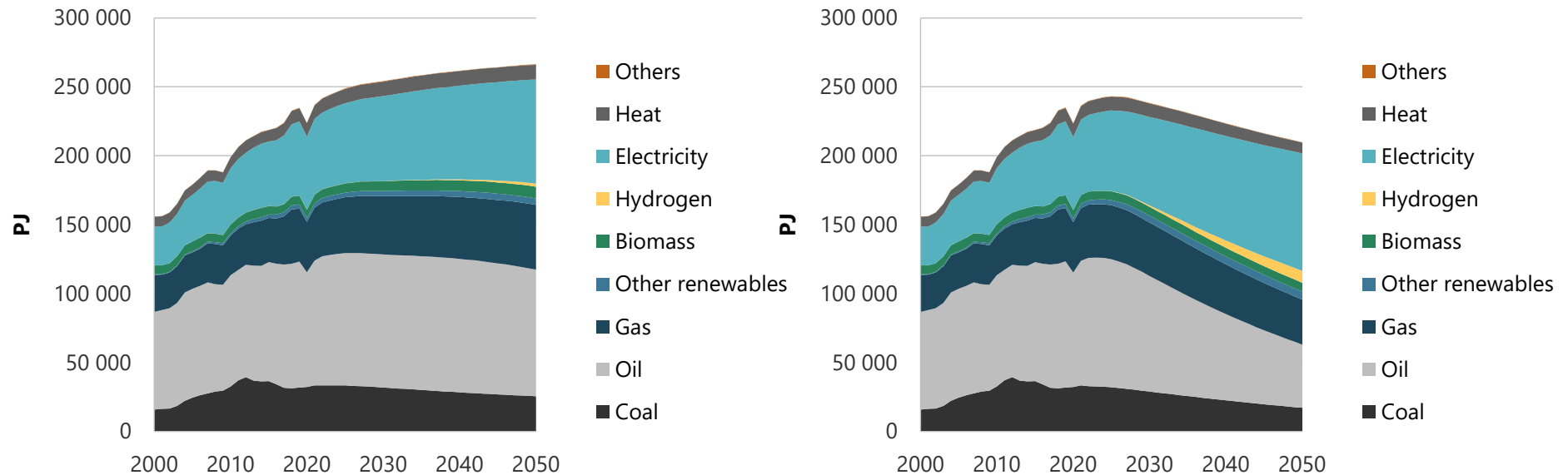
- *The population and GDP assumptions are the same for REF and NZS.*
- *APEC population peaks at 3 030 million in 2036. In 2050. We assumed a global population of 2 975 in 2050.*
- *APEC GDP in 2050 is more than double the 2018 level.*

# APEC Final Energy Demand by Fuel

## Reference Scenario (REF)



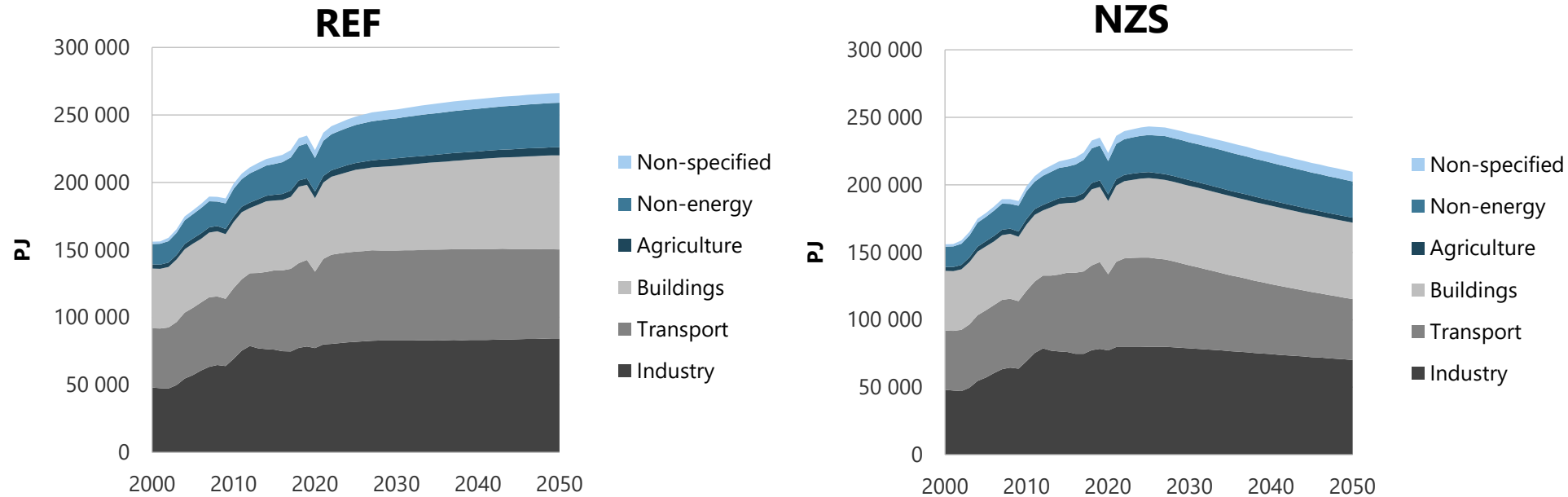
## Net-zero Scenario (NZS)



Sources: APERC analysis (2021).

- *In REF, energy demand grows 14% with respect to the 2018 level*
- *In NZS, energy demand peaks in 2030. Energy demand is 10% lower in 2050 than in 2018.*
- *In NZS, hydrogen represents the 4% of energy demand in 2050*

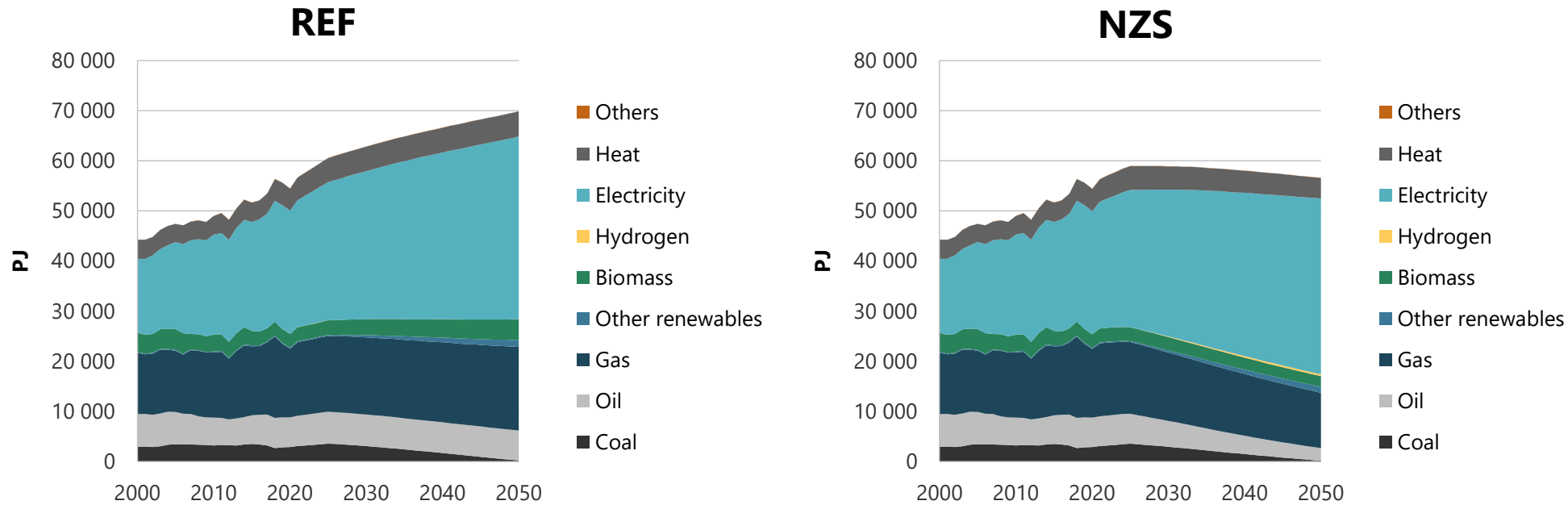
# APEC Final Energy Demand by Sector



Sources: APERC analysis (2021).

- *In the REF, energy demand is almost equally distributed among Buildings (26%), Transport (25%), and Industry (32%) in 2050.*
- *In the NZS, Transport demand decreases 28% by 2050 with respect to the 2018. The reduction is due to the inclusion of technologies such as battery electric and fuel cell vehicles.*

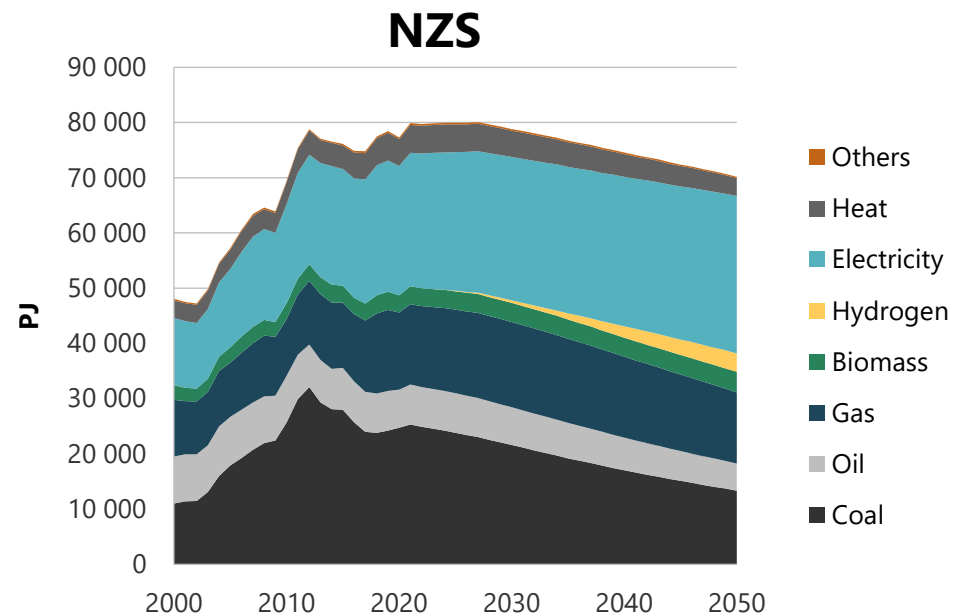
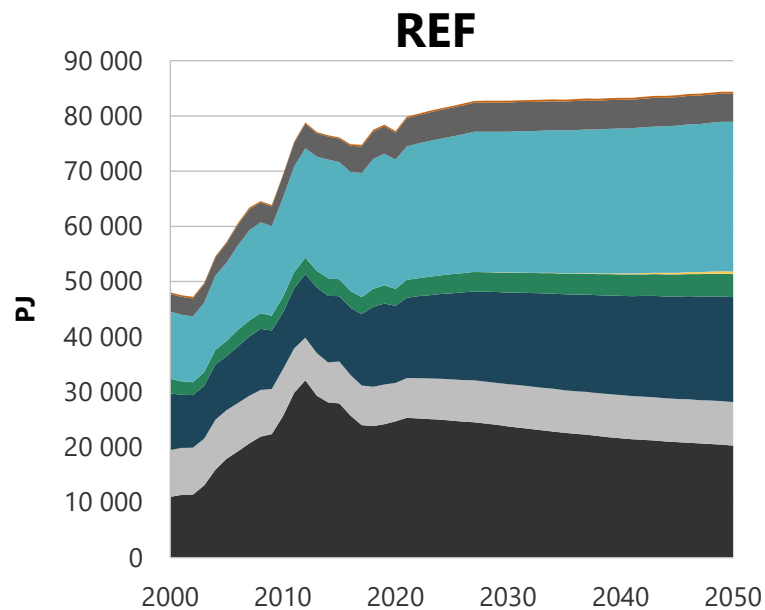
# Buildings



Sources: APERC analysis (2021).

- *In REF, Buildings energy demand grows 40 % with respect to the 2018 level.*
- *In NZS, energy demand peaks in 2028 because of electrification and improvements in energy efficiency, including more stringent building codes.*
- *In NZS, traditional biomass is reduced by 25% from 2018 mainly as result of fuel switching from fuelwood to LPG or electricity.*

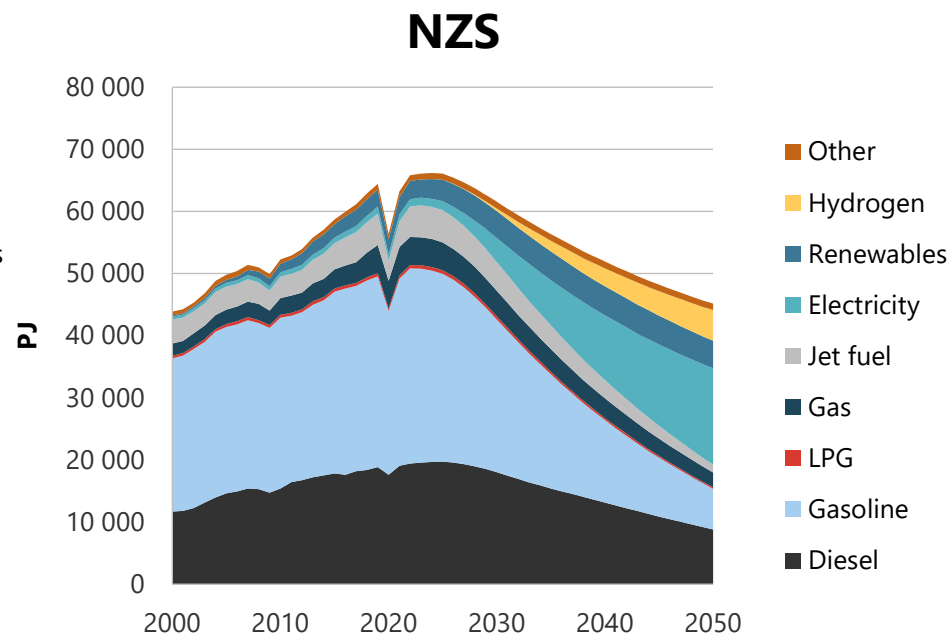
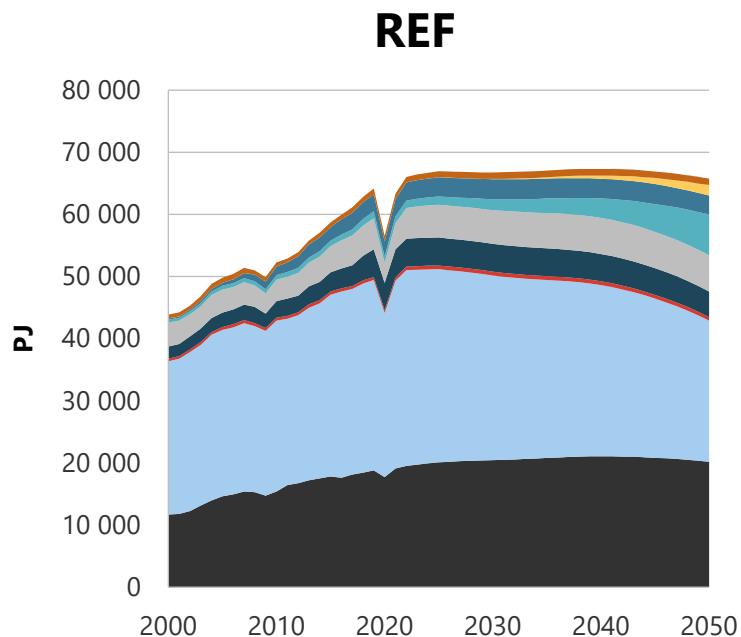
# Industry



Sources: APERC analysis (2021).

- *In REF, Industry energy demand only increases 9% between 2018-2050*
- *In NZS, energy demand peaks in 2030 then declines to be 17% lower than REF in 2050.*
- *Fossil fuels represent 56% in REF and 44% in NZS in 2050.*

# Transport



Sources: APERC analysis (2021).

- *In REF, electricity represents 10% of Transport demand in 2050. Diesel and gasoline maintain their dominant role in Transport, representing 65% of the Transport demand.*
- *In NZS, electricity represents 34% and hydrogen represents 10% of Transport demand.*

# Summary

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- APEC Energy demand in 2050 is 14% higher than in 2018 in REF. Fuel switching and higher energy efficiency improvements are required to change that trend. When such as measures are implemented in NZS, energy demand in 2050 is 10% less than 2018.
- Electrification is one of the most effective measures for energy end-use sector decarbonization, but this strategy relies on transitioning the power sector. Increased electrification is observed in REF, but NZS requires 13% more electricity in 2050 because, despite of increased energy efficiency, electricity is replacing CO2 emitting fuels in thermal uses. The NZS result implies that there is a need to strengthen electricity infrastructure to assure that the additional electricity demand can be met.
- Fossil fuels will continue to be an important component of energy demand even in NZS where they represent 46% of energy demand. Moving away from fossil fuels remains a big challenge in the industry sector.
- Hydrogen plays a role in energy demand, mainly in transport and industry, and is expected to meet 4% of the total APEC energy demand in NZS. Hydrogen use can be increased as more APEC economies establish hydrogen strategies.





**Thank you for your kind attention.**

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