



International
Energy Agency
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Building drivers and metrics

Household, floor area and energy performance forecasts

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In collaboration with Tsinghua University

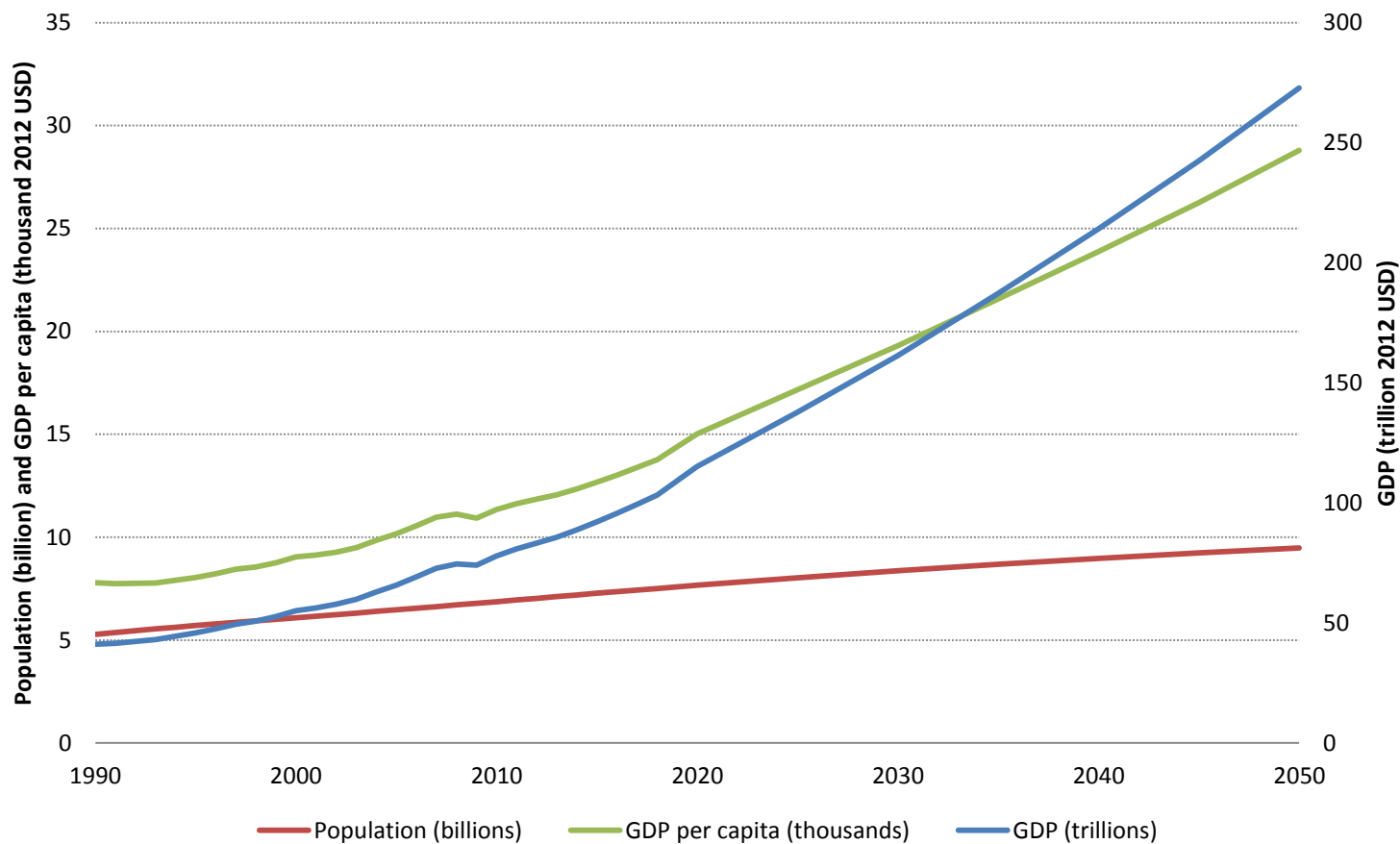
- **Model inputs (ETP)**
 - GDP and Population

- **Residential sub-sector:**
 - Households
 - Floor Area

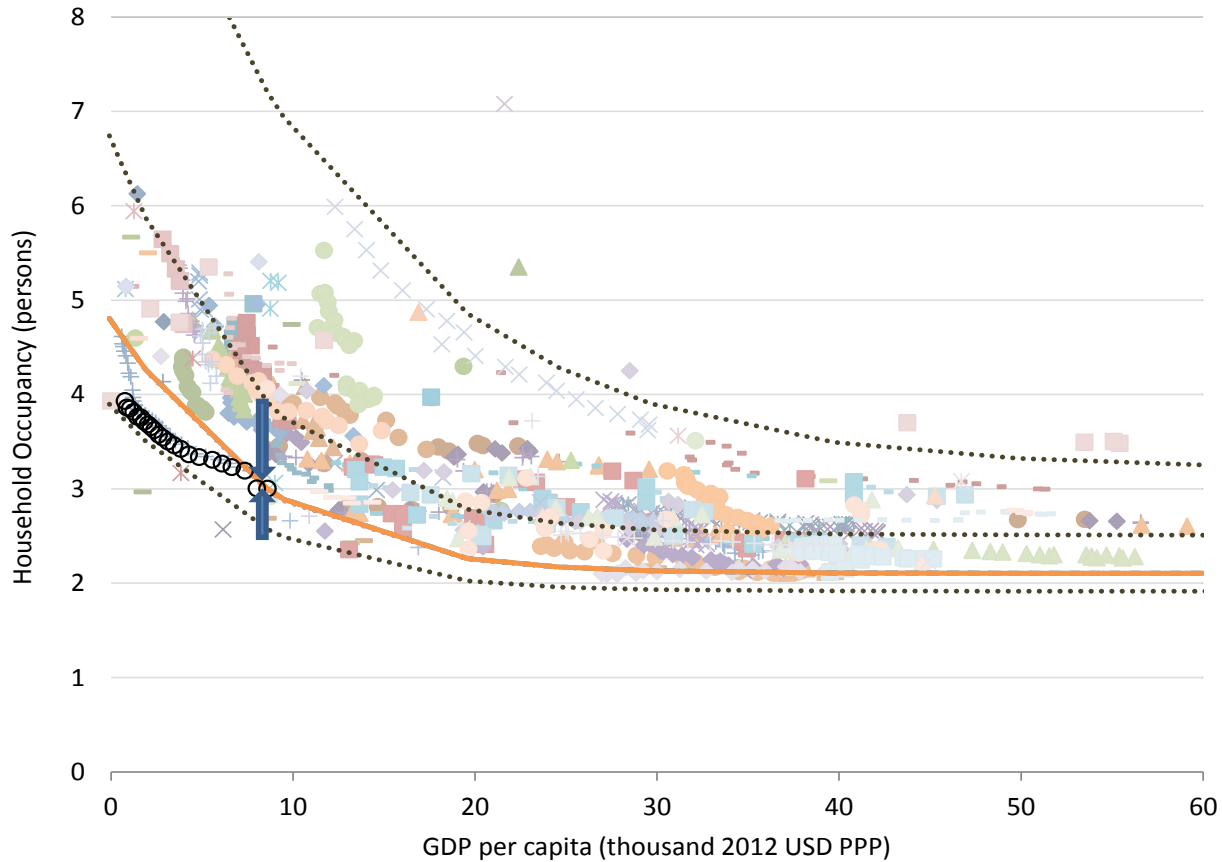
- **Services sub-sector:**
 - Floor area

- **Other drivers, energy intensities and metrics**

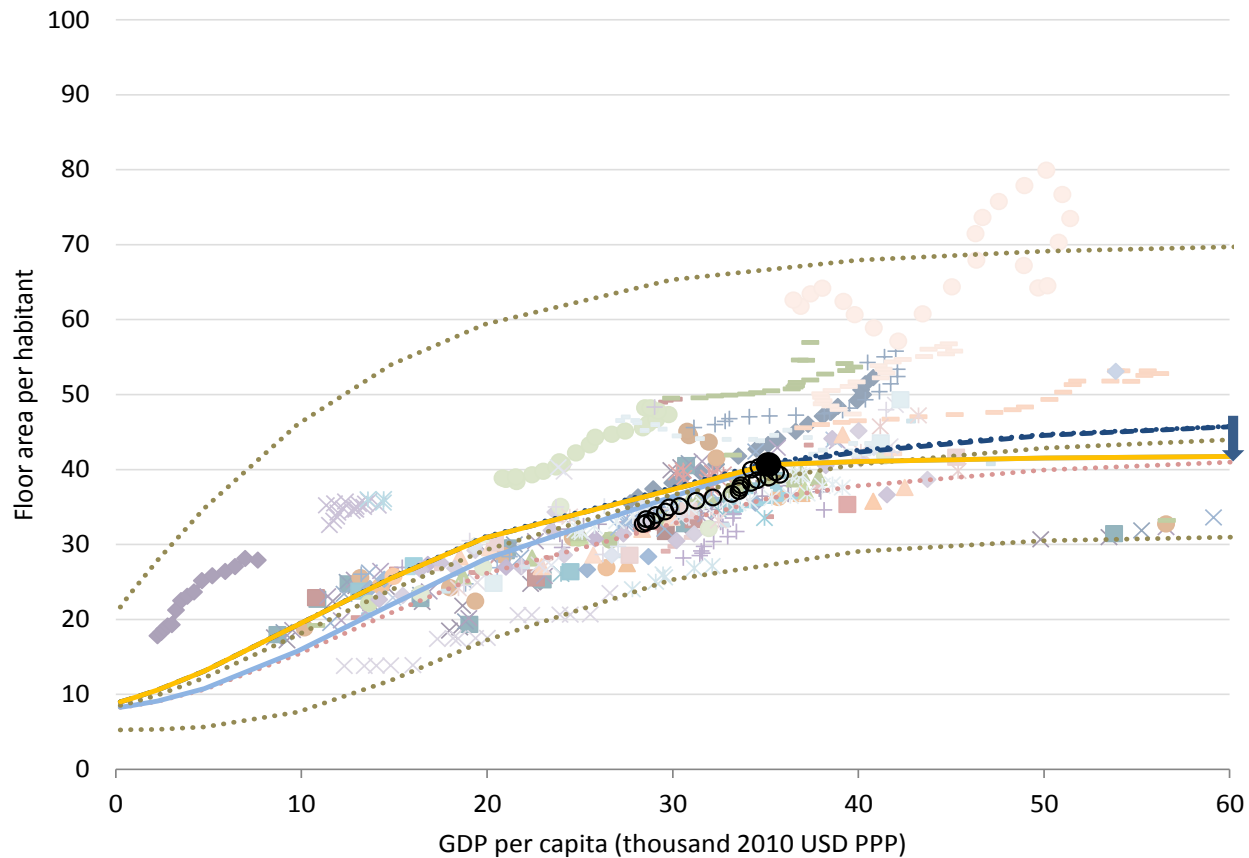
GDP (IMF) and Population (UN DESA)



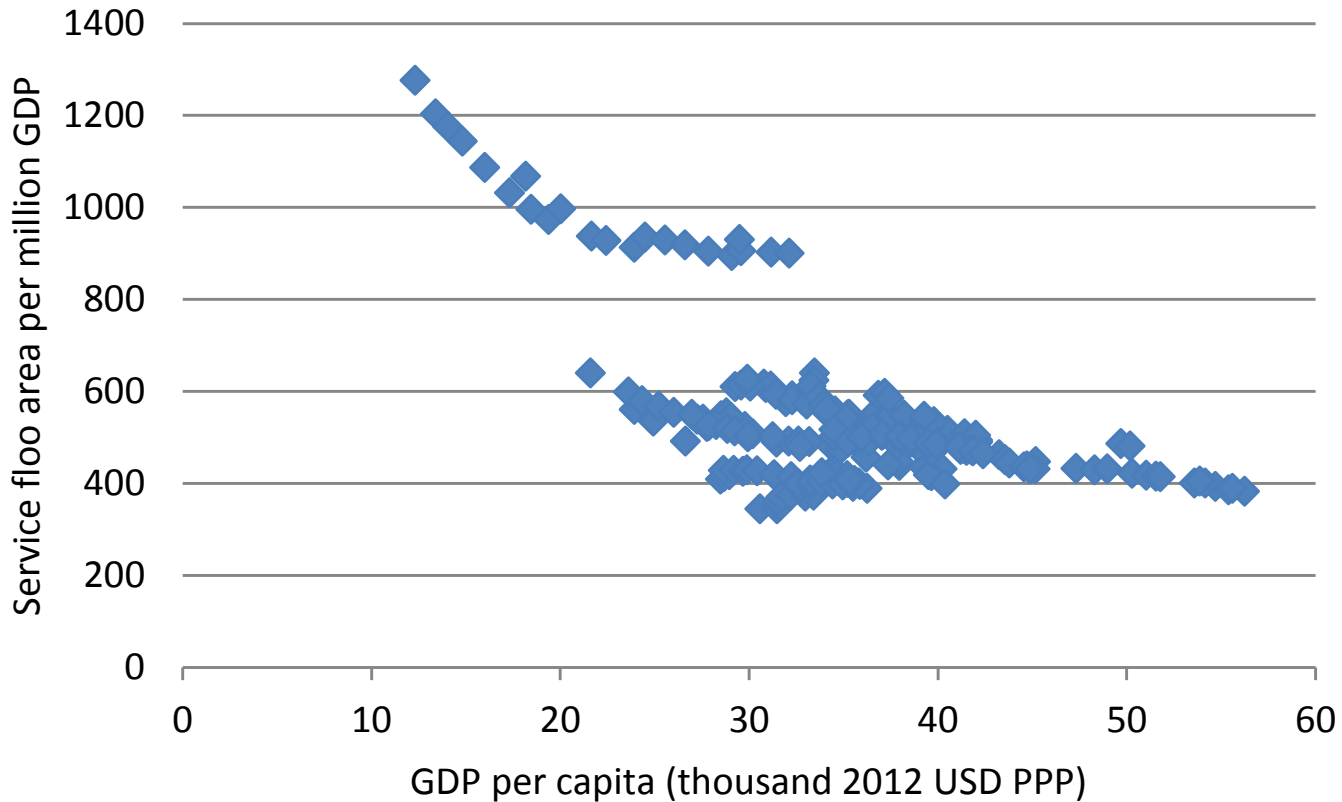
Persons per household



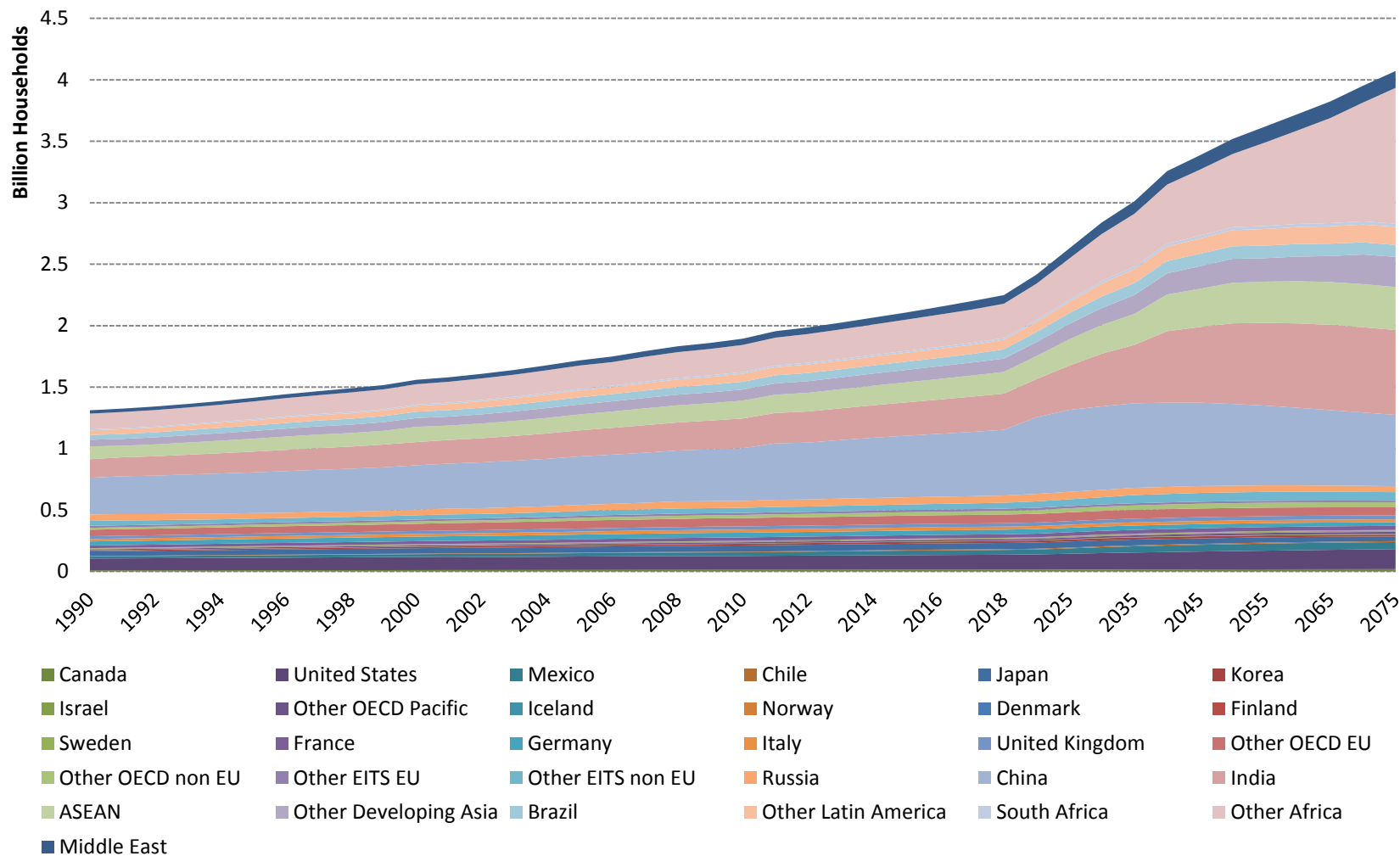
Residential floor area per person (m²)



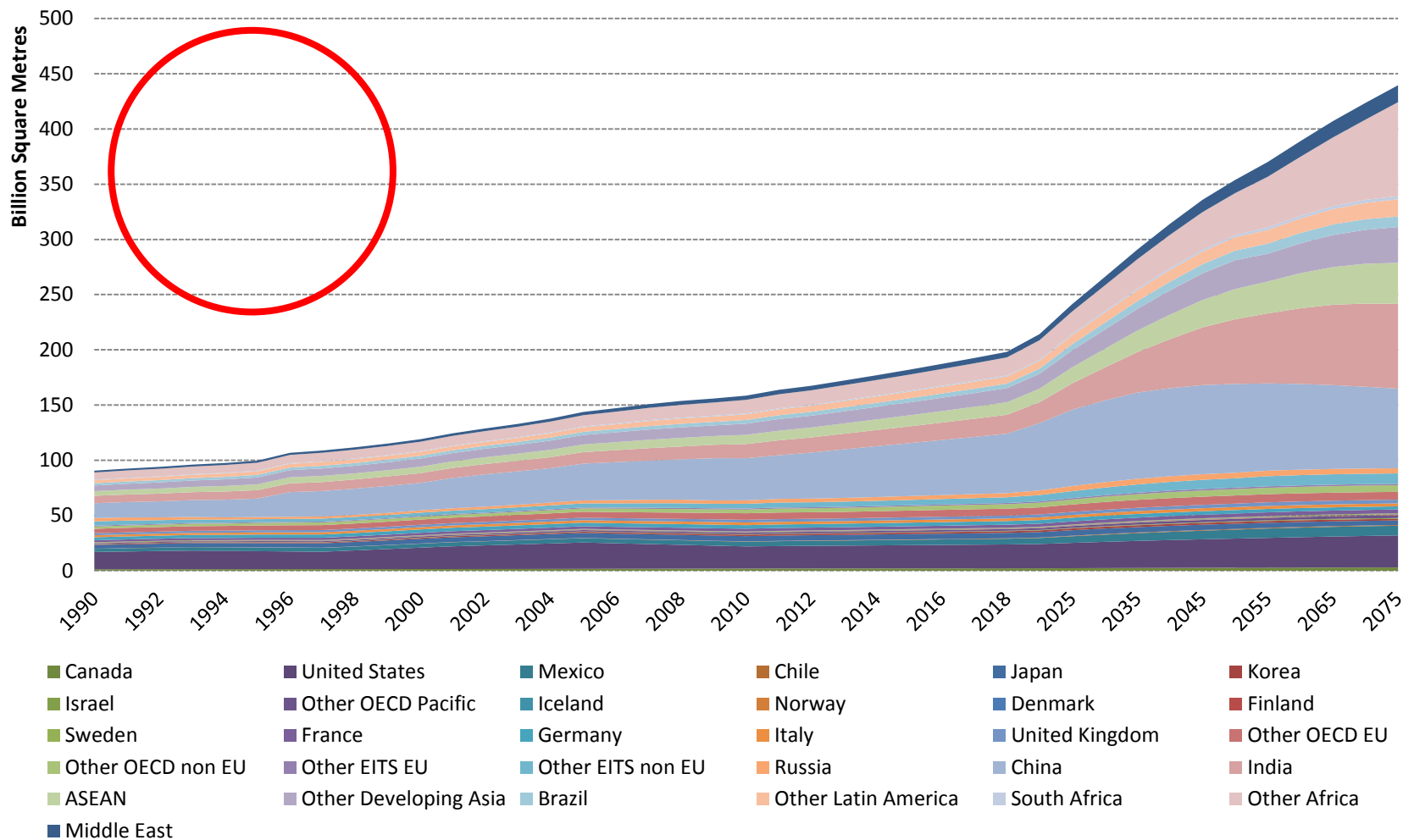
Services floor area (m²)



Households



Residential floor area



Forecasts to 2050

World	2011	2030	2050
GDP (trillion 2012 USD)	80.8	161.4	272.7
Population (billion)	6.95	8.36	9.48
Households (million)	1894	2840	3518
<i>Average persons per household</i>	<i>3.6</i>	<i>2.9</i>	<i>2.7</i>
Residential floor area (billion m ²)	164	266	354
<i>Average m² per person</i>	<i>24</i>	<i>30</i>	<i>37</i>
Service floor area (billion m ²)	35	46	57

Other drivers and metrics

- **Appliance ownership**
 - Refrigerators/freezers, dishwashers, washers/dryers, televisions
- **End-use technology splits**
 - e.g. lightbulb types, bio/gas/electric cooking, heating/cooling equipments
- **Energy intensities and efficiencies**

Forecasts (ex. refrigerators)

