# Plausible Pathways to address South Africa's triple challenge – from co-costs to co-benefits

# Plausible pathways

Two pathways are briefly explored:

- Business as Usual, or the pathway we are on?
- Sustainable and Inclusive Development Agenda, or the pathway we want to be on?

What are the cause and effect pathways, linkages and impacts of our decisions for South Africa's triple challenge?

**Equality – Poverty – Employment**

# Drawing the dots – co costs of BAU or co benefits of a Just Transition

- BAU demonstrates higher inequalities, missed opportunities and increased poverty – in the name of continuing on a carbon intensive pathway
- SIDA reflects an increasingly inclusive society, opens up alternate economic development options and reduces poverty – over time
- SIDA also aligns SA with global trends and international diplomacy and policy, while reflecting reduced carbon emissions over time

**An equitable transition to low carbon and climate resilient economy is feasible i.t.o. the National Development Plan although the conversations and trade offs will still be hard**

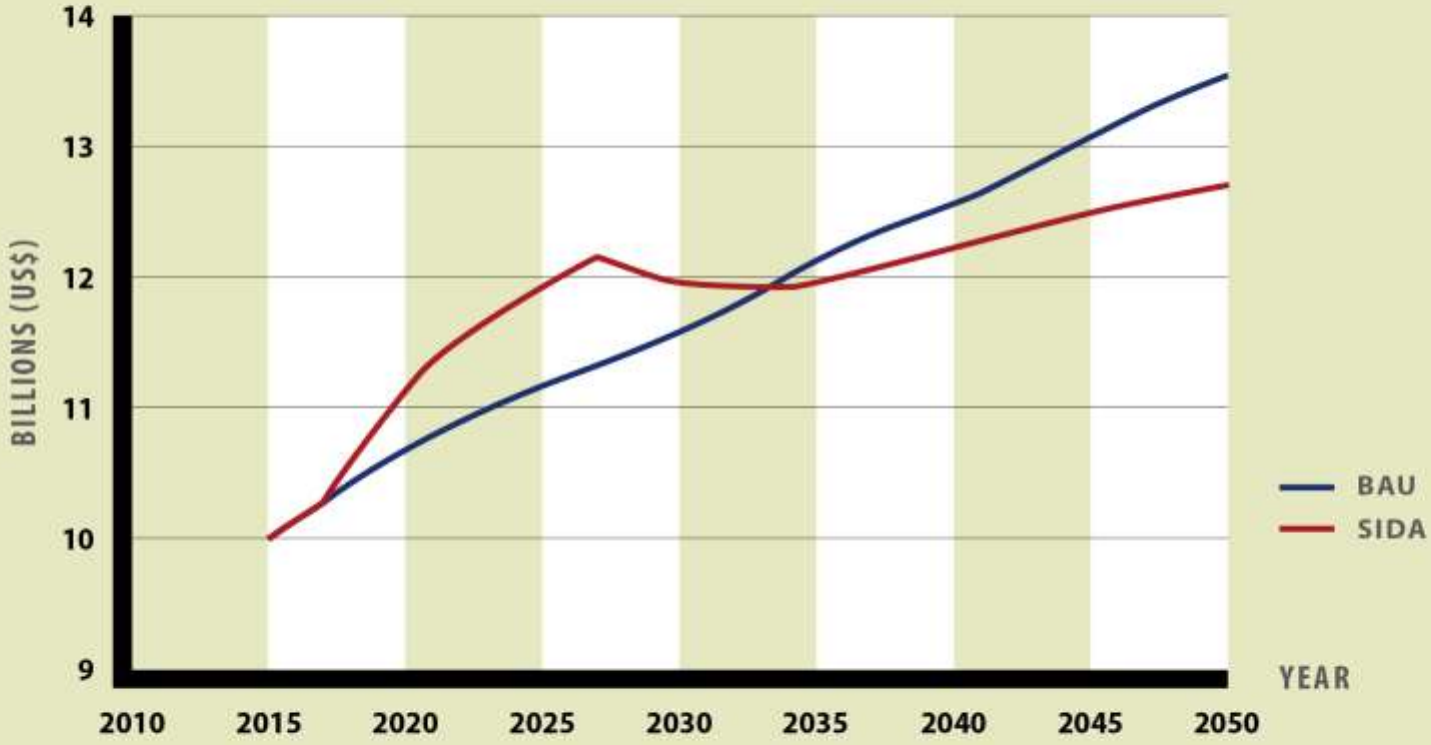
# Value added (to GDP) is higher in most sectors under SIDA

- Agriculture, manufacturing, materials, ICTs, and services
- Value added from energy rises and then flattens under BAU and decreases under SIDA
- The services sector shows the greatest growth

**Growth is forecast in both pathways in all sectors, except energy**

# VALUE ADDED BY SECTOR

## FIGURE 2 AGRICULTURE

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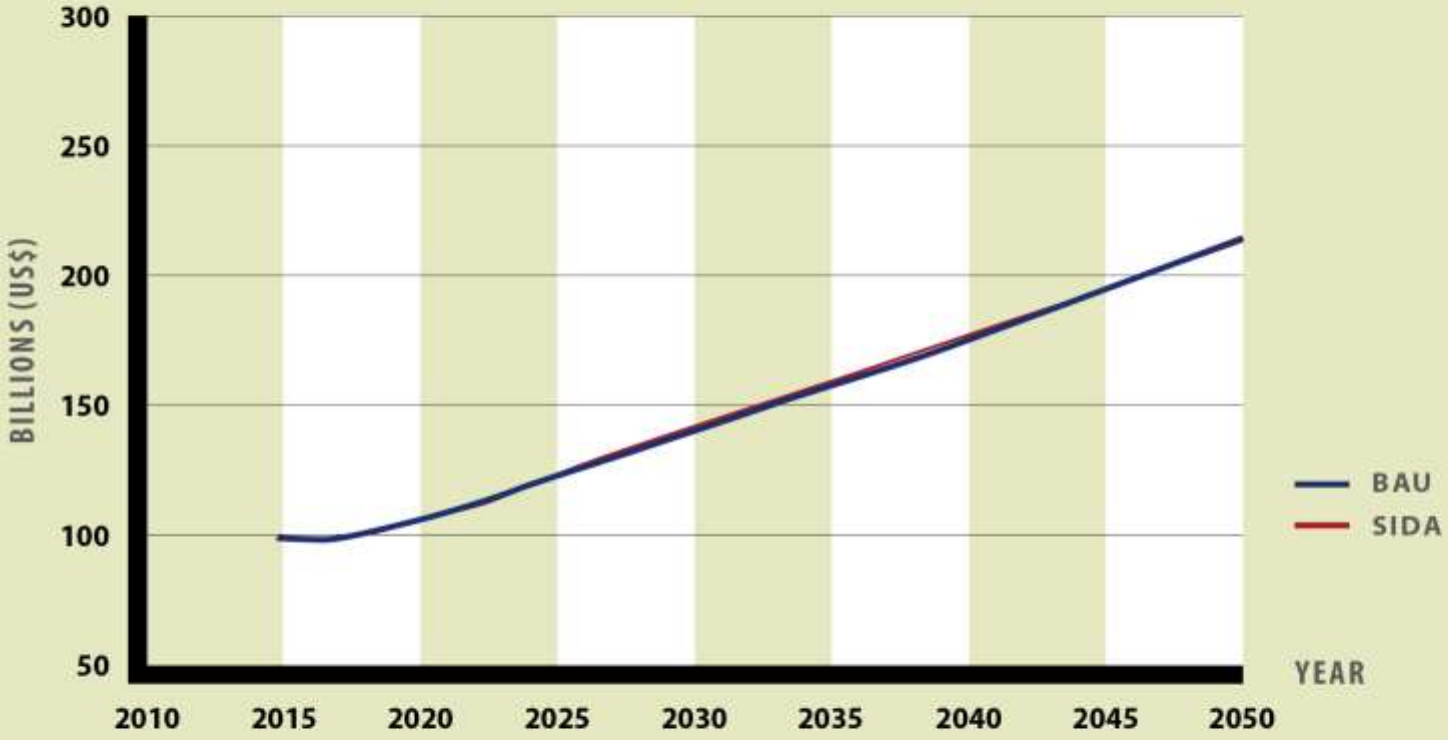
## FIGURE 3 MANUFACTURING

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## FIGURE 4 MATERIALS

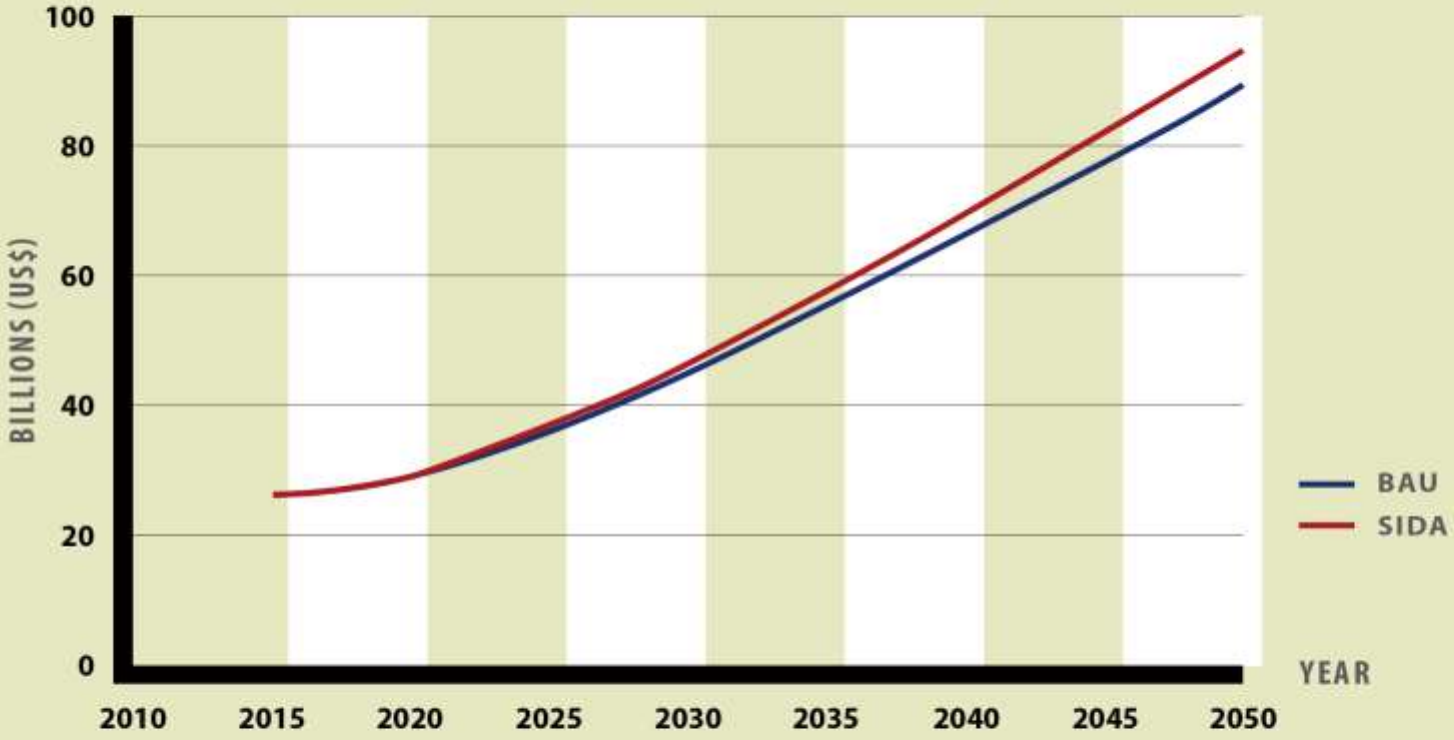


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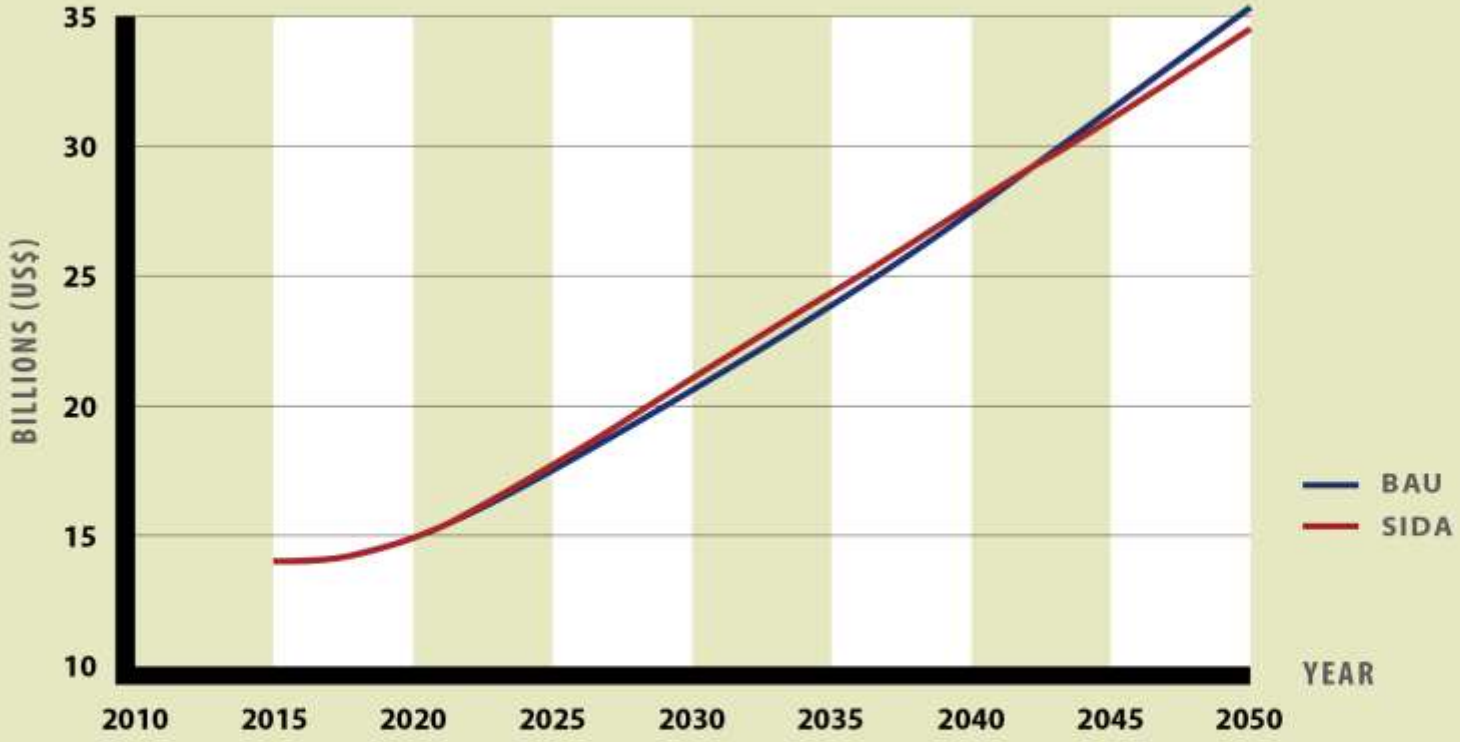
**FIGURE 7** ICTS

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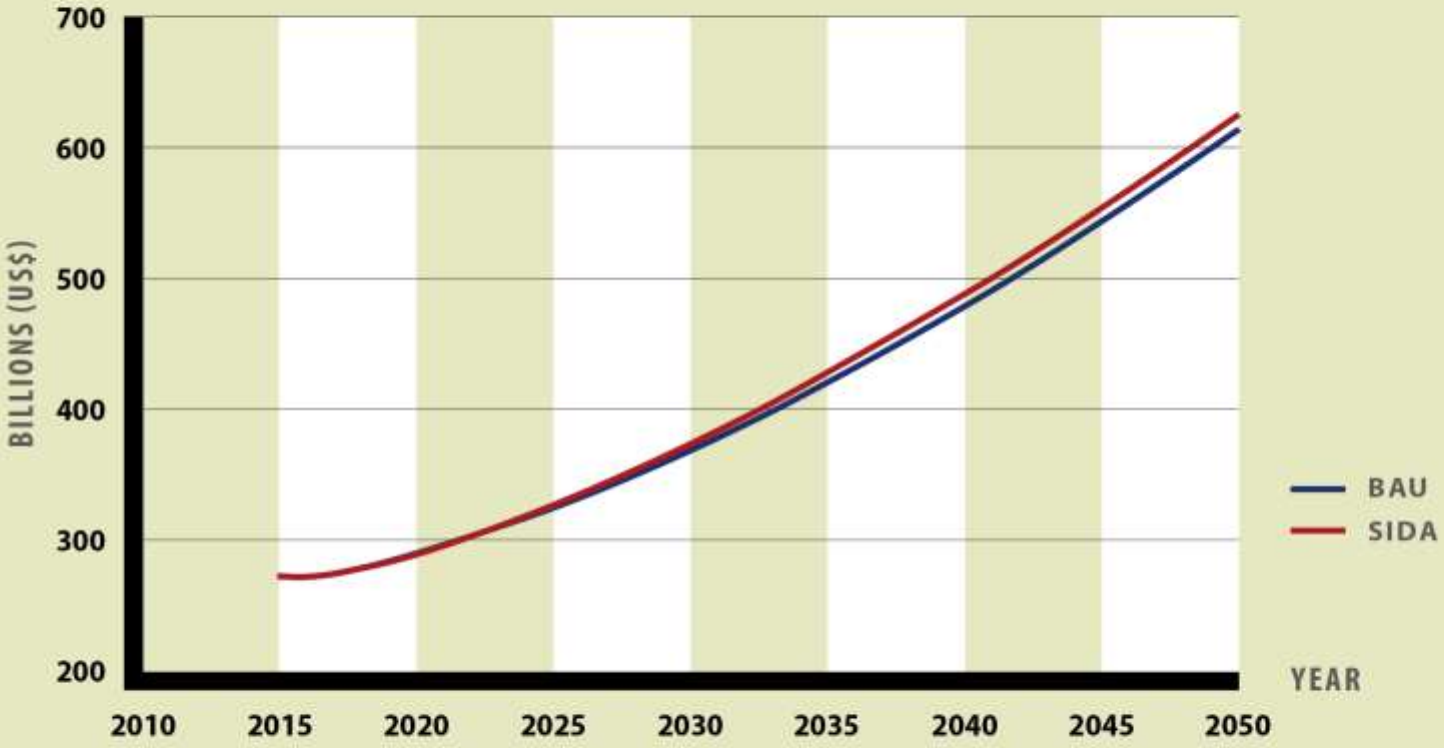
## FIGURE 5 SERVICES

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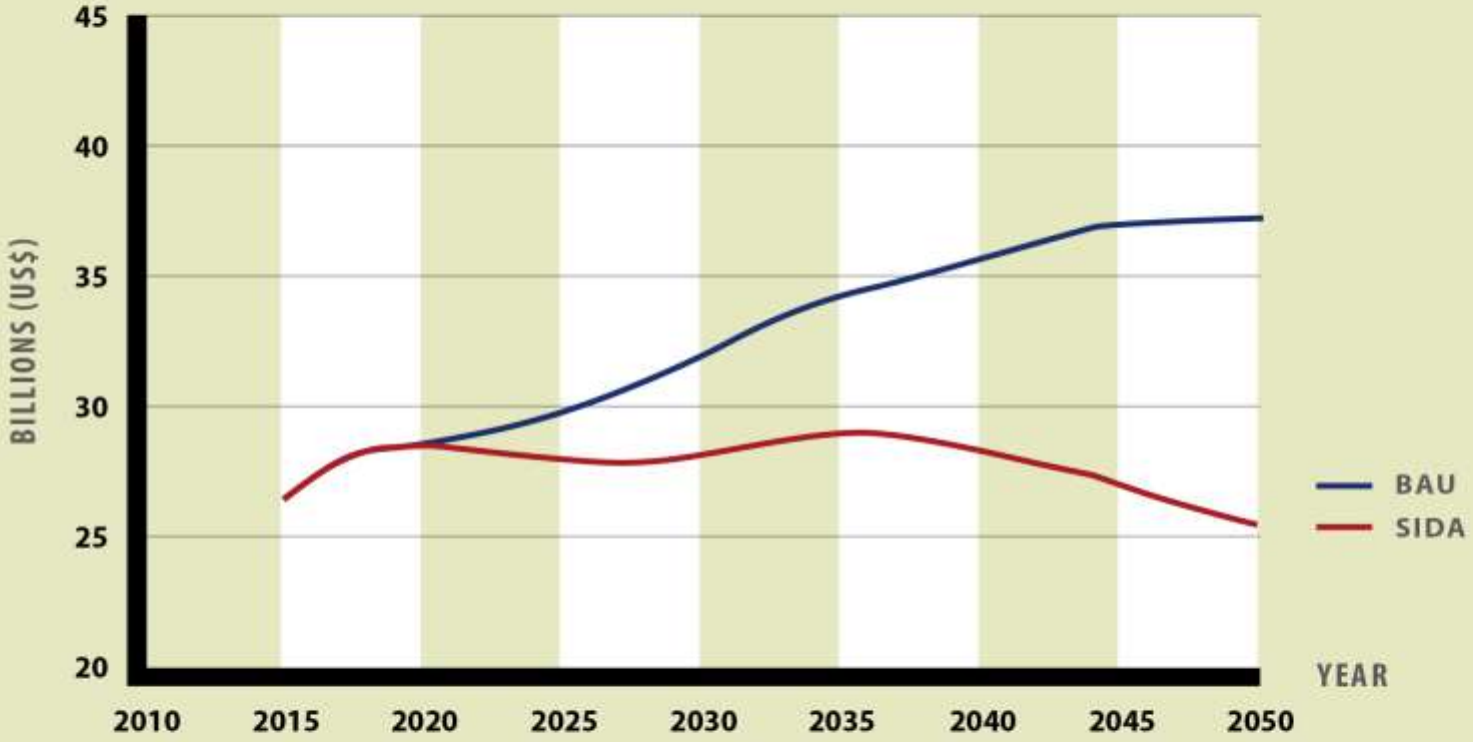
# Value added from energy decreases under SIDA

- Value added from energy rises and then flattens under BAU and decreases under SIDA where the emphasis is on carbon intensive energy is substituted with alternate, cleaner, renewable and more efficient energy products
- A SIDA path would see > IPPs resulting in more efficient transmission and distribution of energy and a transition from the current monopolistic energy model. The costs of energy come down
- Under SIDA, the lines between energy producers and consumers become blurred, but energy consumption, especially electricity, will increase.
- Less generation capacity is required under a SIDA path

## FIGURE 6 ENERGY

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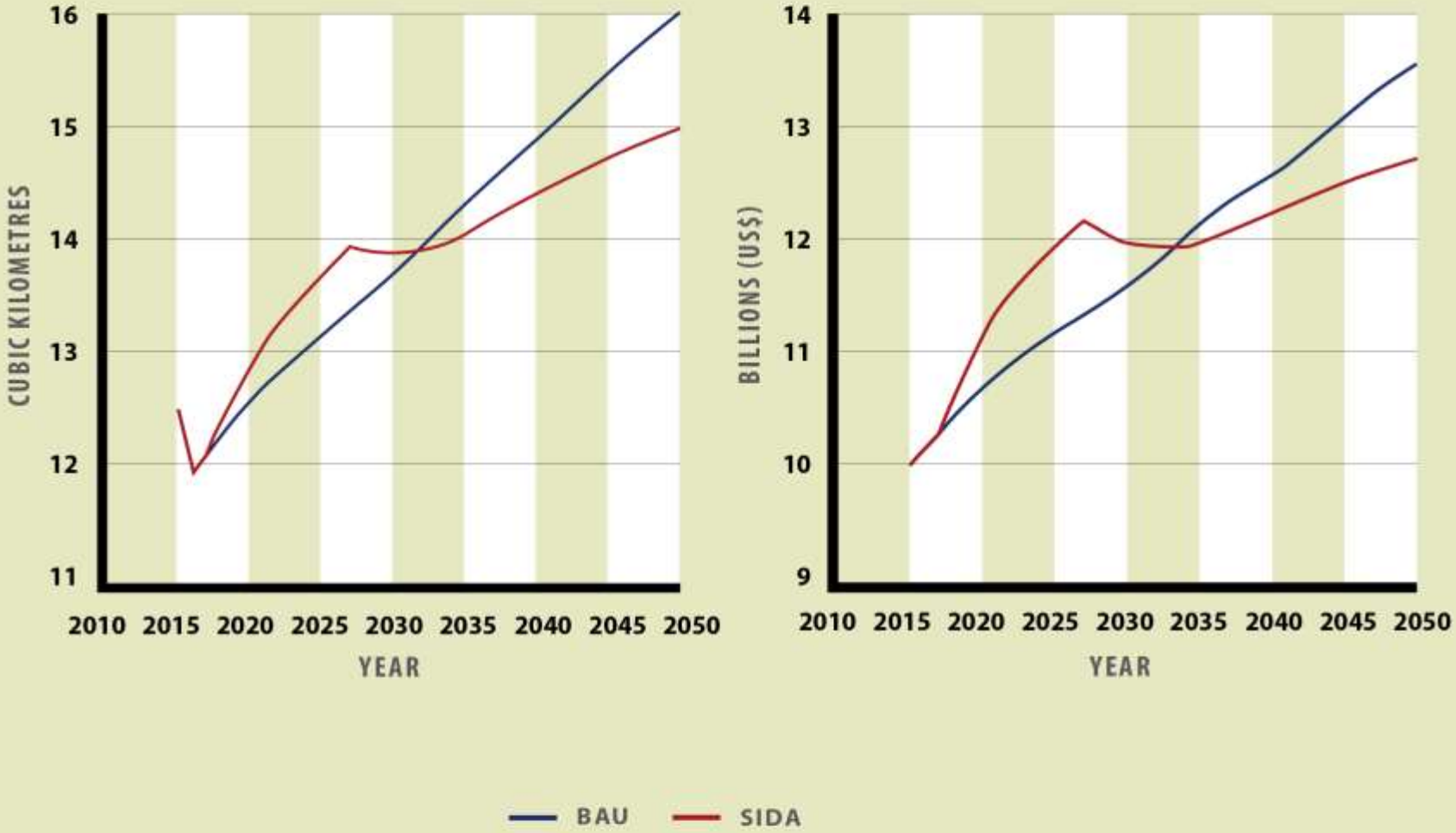
# Water use tracks agriculture and other sector growth pathways

- Agriculture is rising under both forecast periods
- It rises at a steady rate under BAU
- In contrast, initially the sector's value added is rising at a higher rate under SIDA than BAU until mid-2030s
- Under SIDA, the rate is slower than BAU
- Water use is set to rise under either pathway
- SIDA-led industrialisation will place greater, ***initial*** demand on water resources
  - Pressing need for alternative energy sources
  - Higher industrialisation
  - Efficient agriculture

**The water use trend will not be sustained – in the next 15 years water use is expected to be lower under the SIDA path relative to BAU**

## FIGURE 14 WATER USE AND AGRICULTURE

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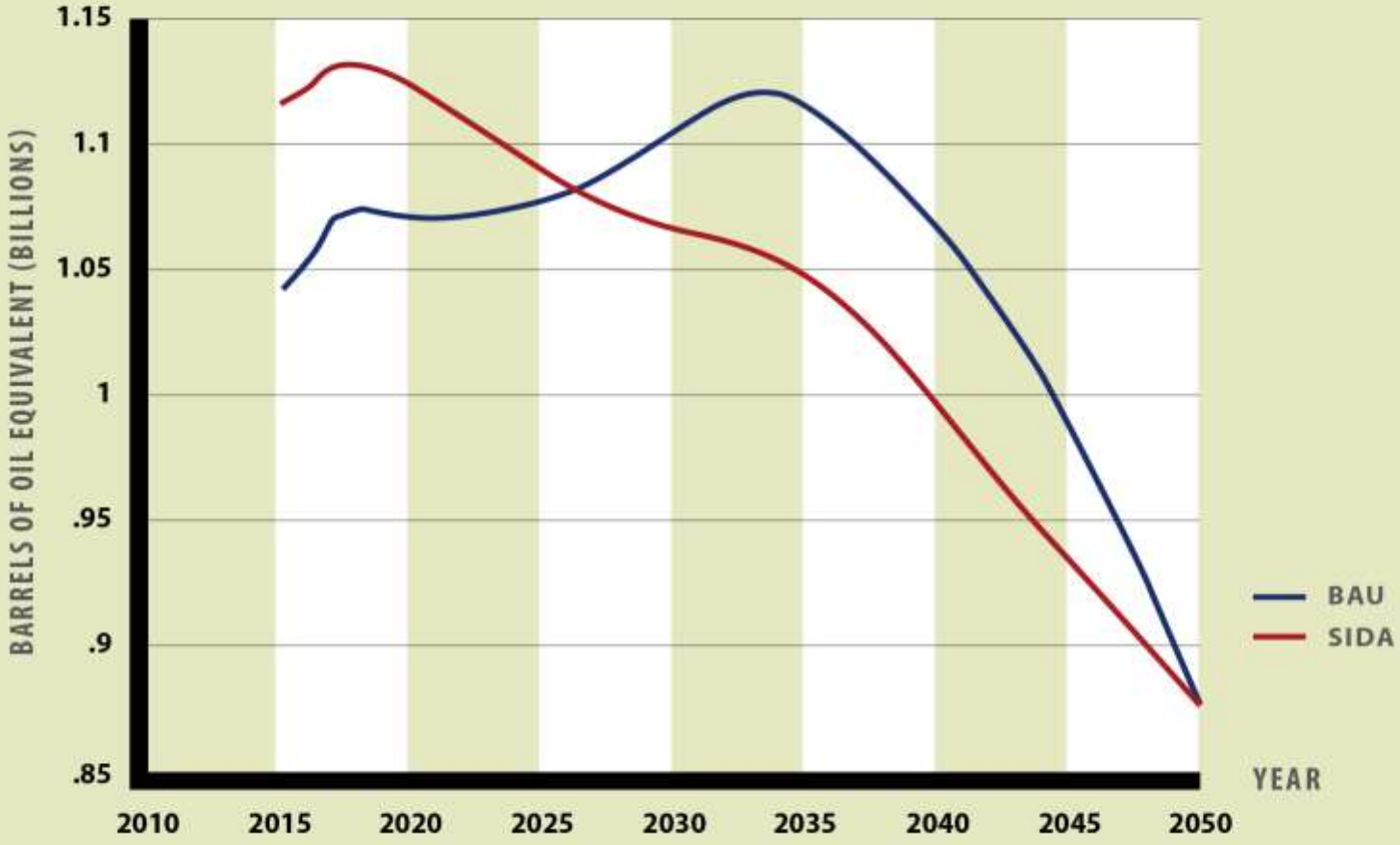
# Coal production drops under either pathway, tracking RE growth globally and locally

- Under the forecast period, coal production drops under BAU
- Under a SIDA pathway, coal production drops precipitously - along with its associated carbon footprint
- The production of RE increases under both pathways – growing exponentially from the mid 2030s
- RE production growth is slower under SIDA where energy demand is lower relative to BAU – reflected in the energy demand figure
- Under SIDA, energy production will also be more efficient, cheaper and cleaner, hence the lower production of alternate energy use
- Under BAU, energy production is expensive, inefficient and dirtier

# ENERGY PRODUCTION AND ENERGY DEMAND

**FIGURE 8** ENERGY PRODUCTION, COAL

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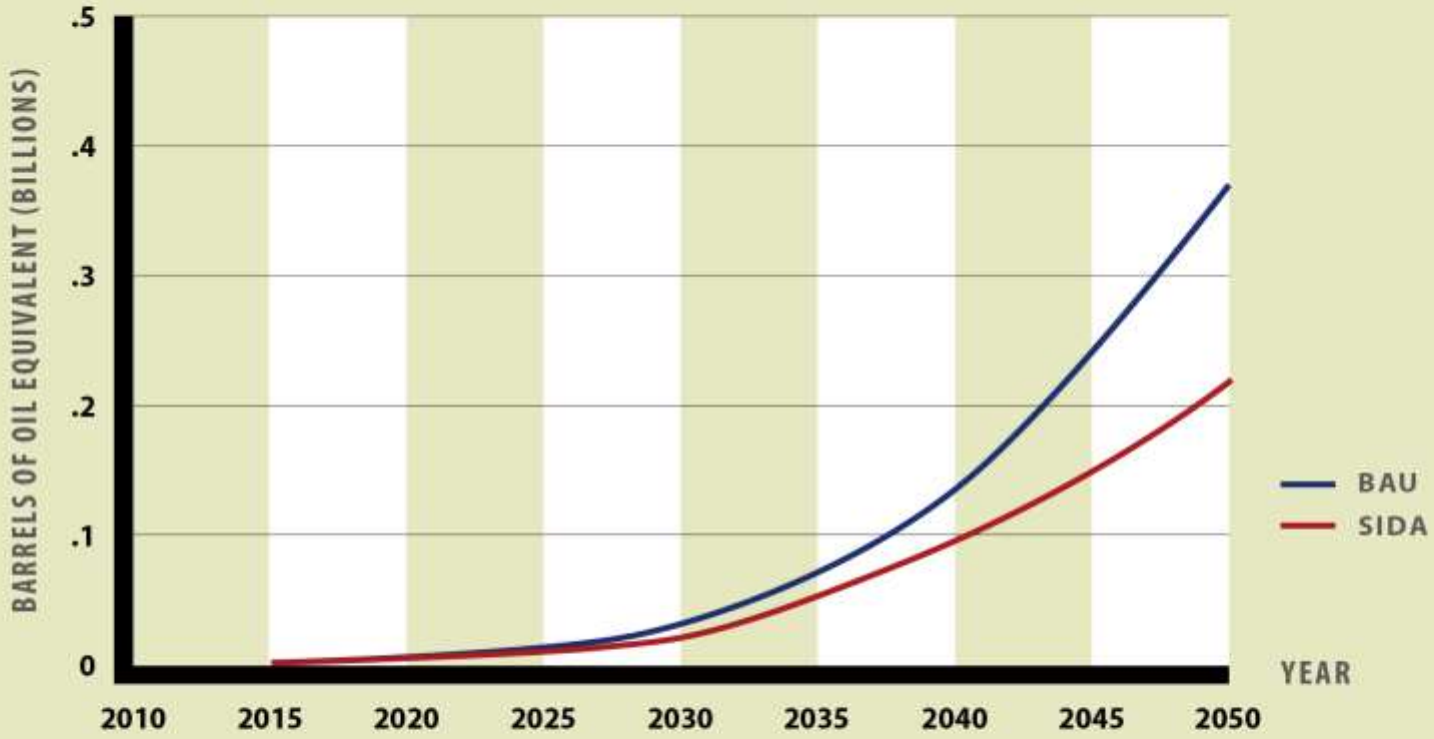
## FIGURE 9 ENERGY PRODUCTION, OTHER RENEWABLES

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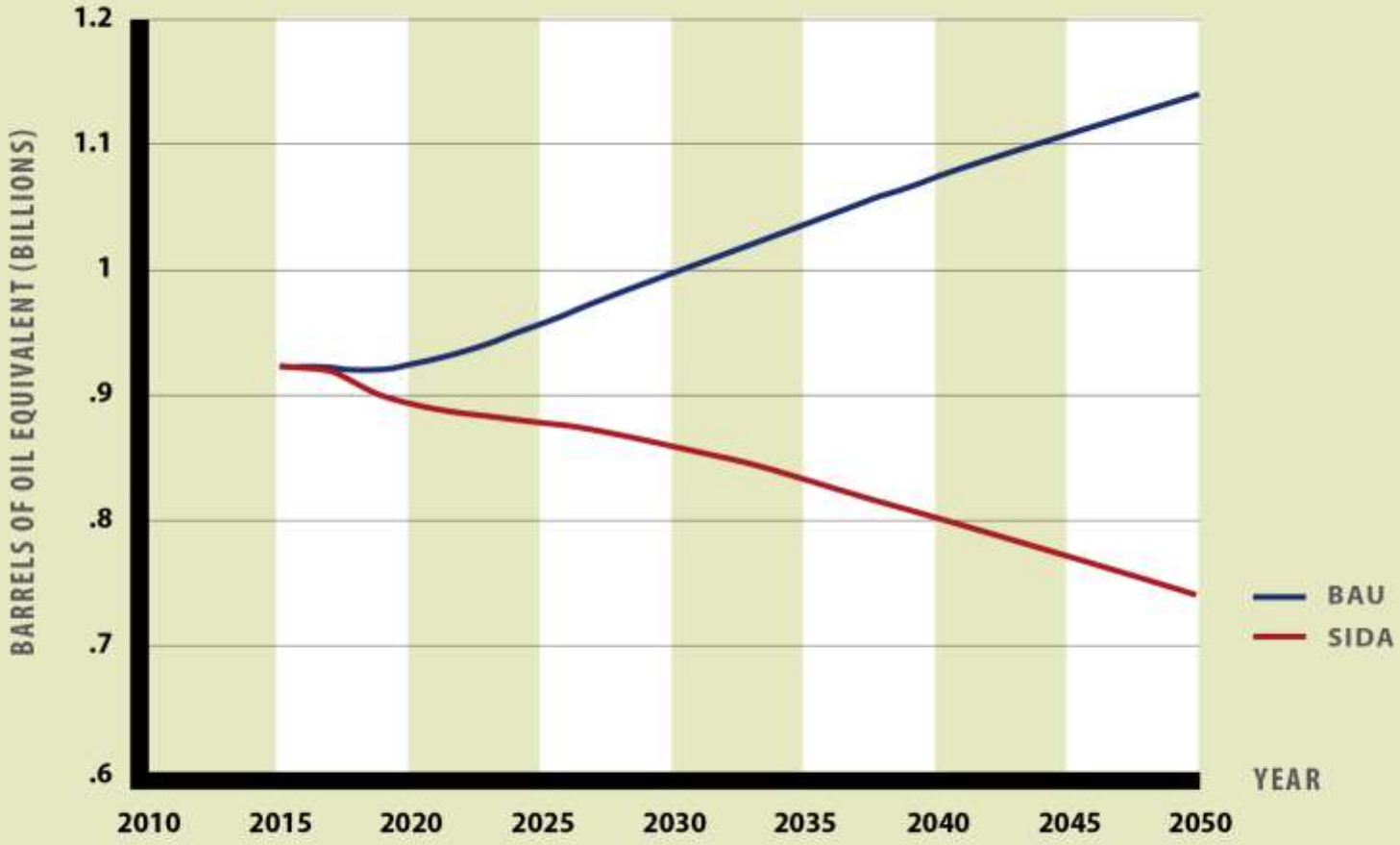
## FIGURE 10 ENERGY DEMAND, TOTAL

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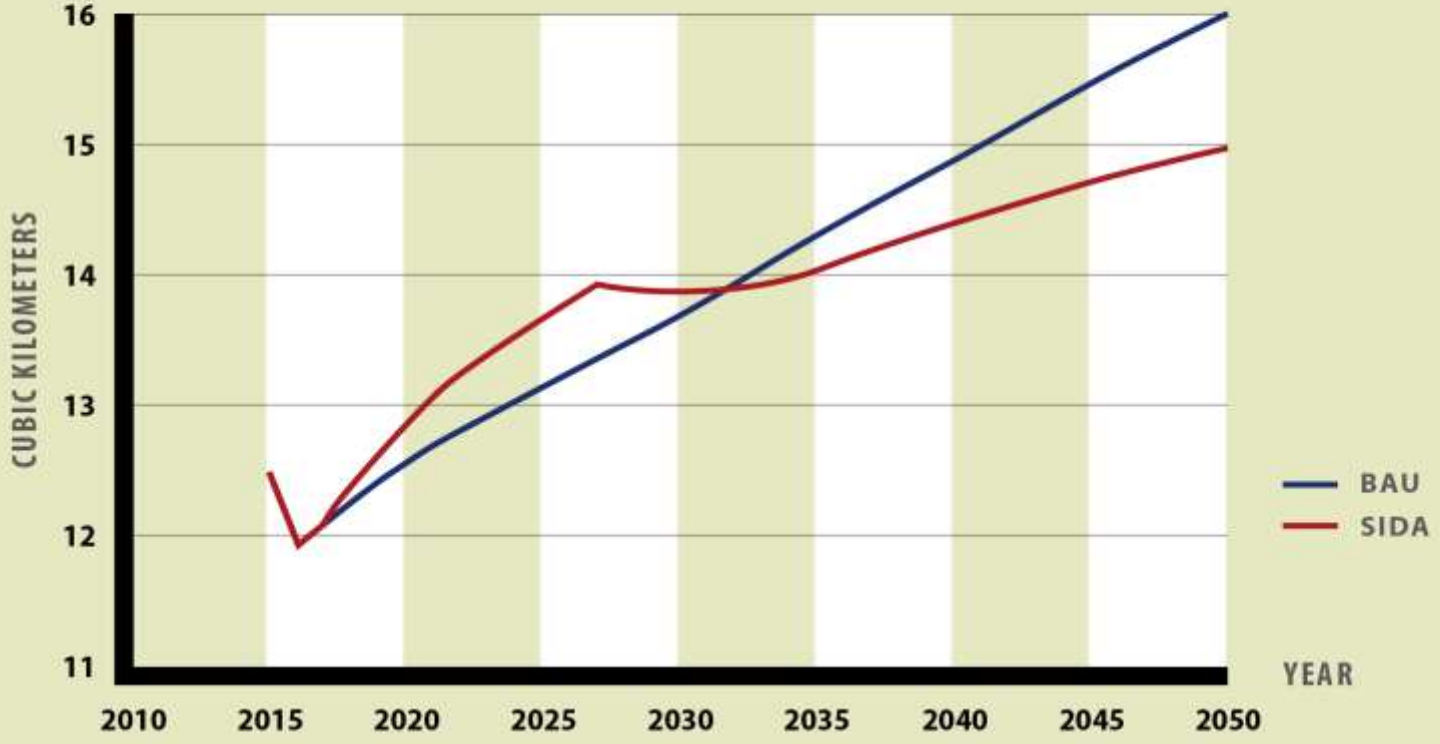
# Water use increases, along with infrastructure investments

- Both are driven by anticipated economic growth
- Water infrastructure, currently under-invested, increases under both pathways, particularly SIDA
- However, infrastructure spend is lower under SIDA – possibly reflective of the lower cost and efficiency associated with low carbon and resource efficiencies as compared to BAU

## FIGURE 11 WATER USE – BAU

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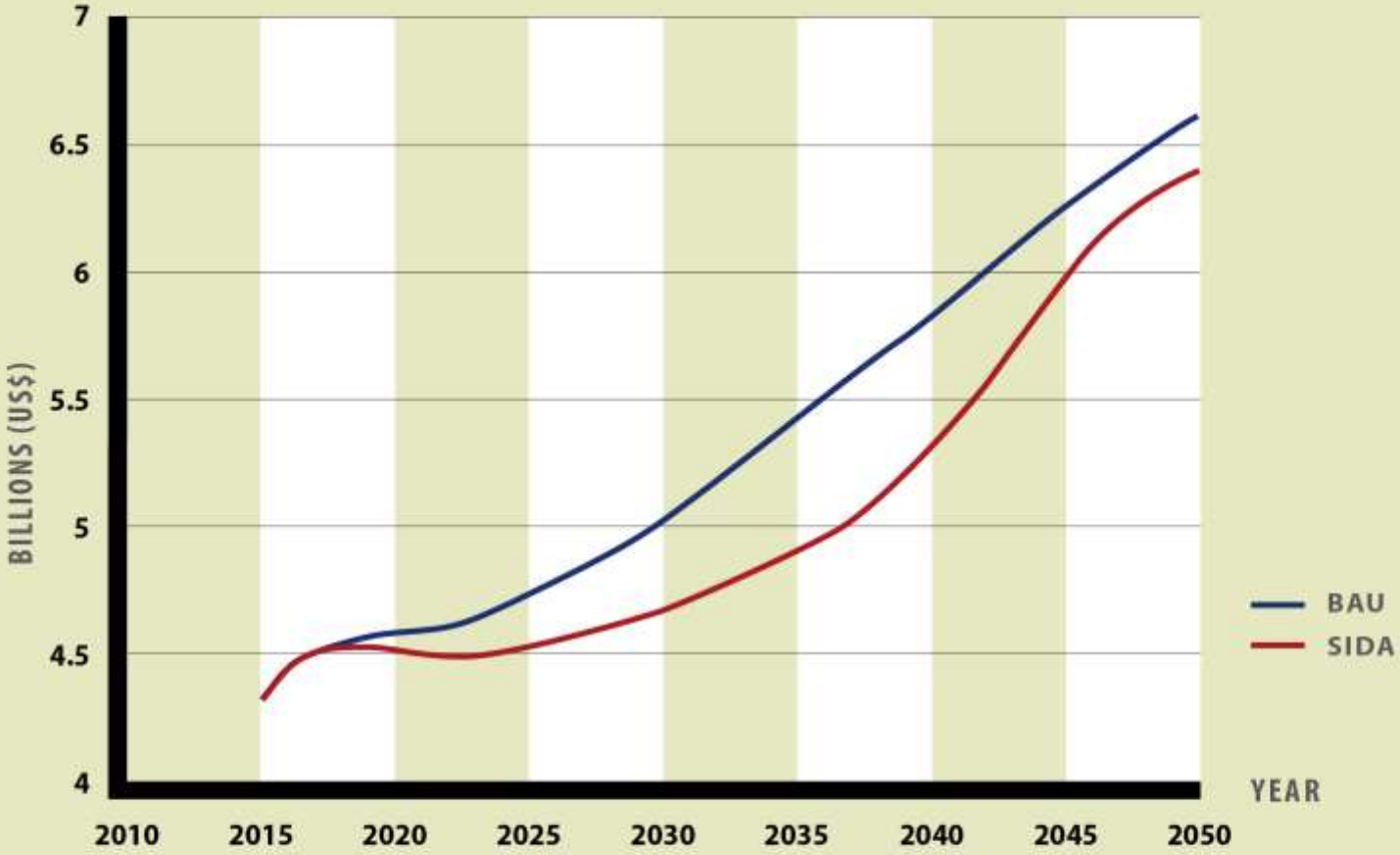
## FIGURE 12 INFRASTRUCTURE INVESTMENT

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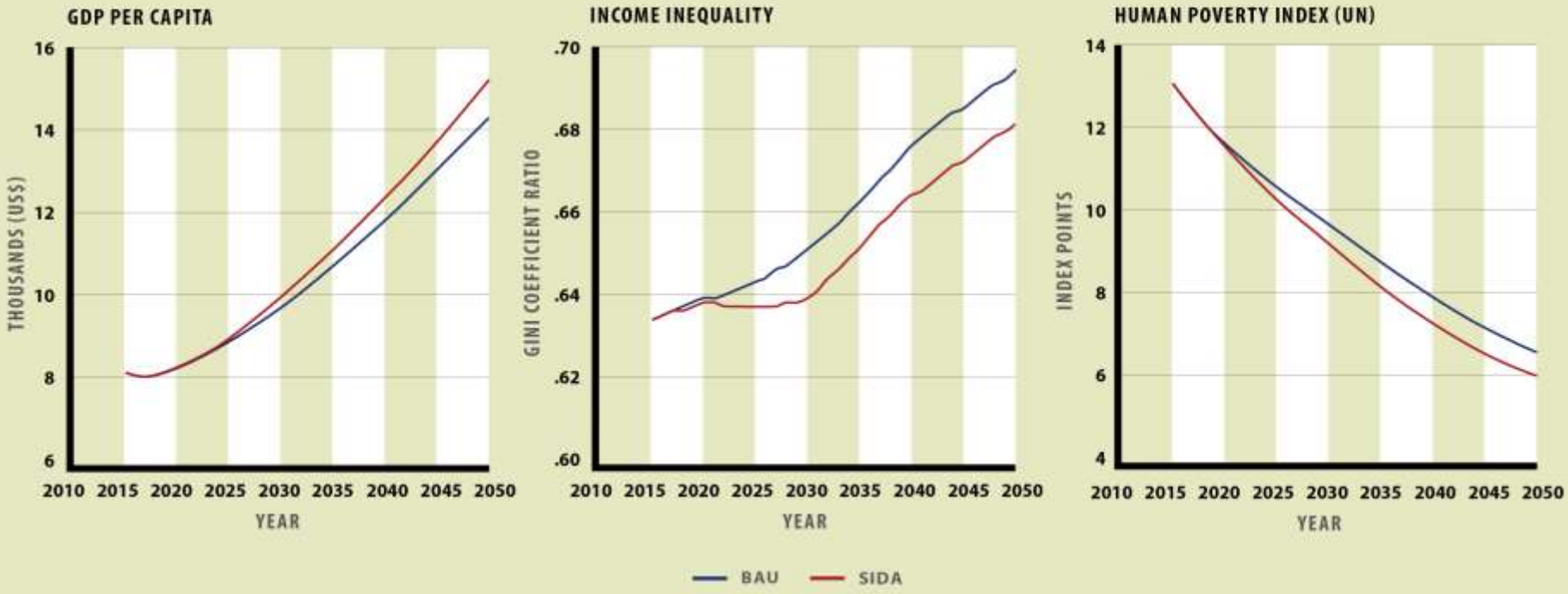
# So far, the social impacts of each scenario are more positive under SIDA

- Per capital income is poised to increase under both pathways
- Importantly, under SIDA, this is higher, reflective of the inclusive nature of a resource efficient and low carbon pathway where economic growth is more closely coupled to job creation, particularly due to the formalisation of the labour market
- Income inequality is expected to rise under both scenarios, but rises more slowly under SIDA, depicting greater inclusivity in economic growth

# SOCIAL IMPACT

## FIGURE 13

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