



CARBON PRICING
LEADERSHIP COALITION

NBI

National Business Initiative

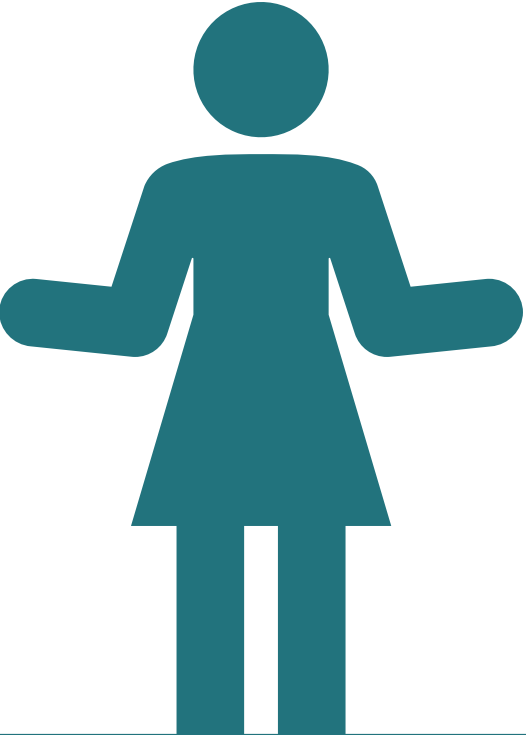
CARBON PRICING AND JUST TRANSITION *STUDY OBSERVATIONS*

BUSINESS ACTION FOR SUSTAINABLE GROWTH

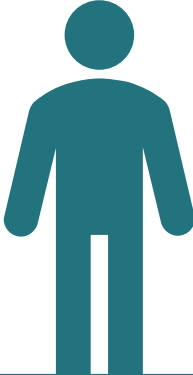


KEY CONTEXT

SOUTH AFRICA (AND OTHER DEVELOPING COUNTRIES) IS DEEPLY CONCERNED WITH THE IMPACT ON CLIMATE CHANGE ON SOCIAL ISSUES; AND THEREFORE, THE INTERACTION BETWEEN THE CARBON PRICE AND SECTOR COMPETITIVENESS. MAJOR CHANGES IN SECTOR TECHNOLOGY USE AND PRODUCTION COULD TRIGGER SIGNIFICANT SOCIAL CHANGE. ALL THIS IN THE CONTEXT OF NET-ZERO BY 2050 PATHWAYS; CARBON PRICING EXISTING IN A BROADER COMPLIMENTARY POLICY FRAMEWORKS (REAL AND POTENTIAL); AND THE VARYING IMPACT OF CARBON PRICING BY SECTOR AND THEREFORE THE PRICING STRATEGY WE DEPLOY



How can we predict future prices; and what pricing strategy could we use?



How do we go about setting complimentary policy?

How will pricing impact competitiveness and therefore trigger social costs?

KEY QUESTIONS WE KEEP HEARING

In conversations and in the literature

OBJECTIVE 1: DEVELOP A PROCESS THAT ENHANCES PARTICIPATION AND TRANSPARENCY



- Encourage engagement with pricing as an instrument
- Build transparency around critical data needed
- Build trust
- Extract technology options and consideration of innovation
- Help policy makers assess pricing impacts on sector competitiveness and on social outcomes

OBJECTIVE 2: TEST THE PROCESS WITH 3 SECTORS

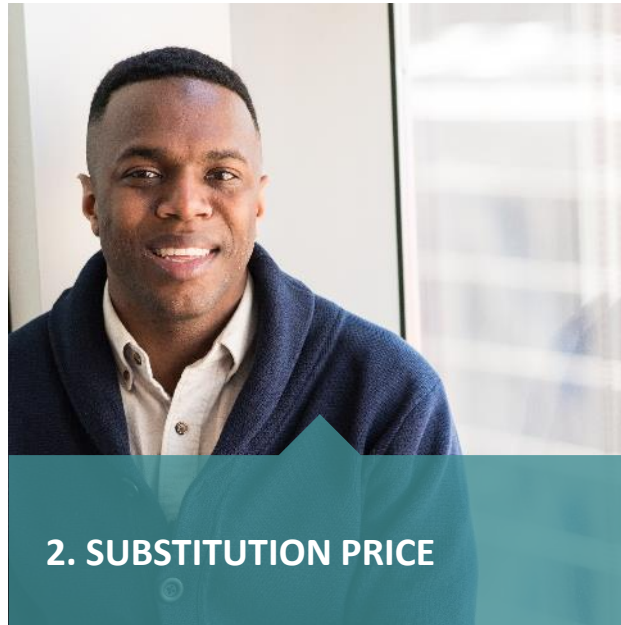


- Identify the most vulnerable sectors and the technology options available to them
- Identify the sector's views on policy and finance measures that would support a carbon price in enabling the transition of that sector.
- Understand the social and other factors that will contribute to a transition that is both orderly and mitigates against any unintended consequences such as job losses of that sector.
- Understand the pricing trajectory that would enable technology adoption that would meet internationally agreed climate goals.

THE METHODOLOGY FOCUSES ON THREE SEQUENTIAL CONCEPTS



At what carbon price would a sector switch to a lower carbon technology or product output

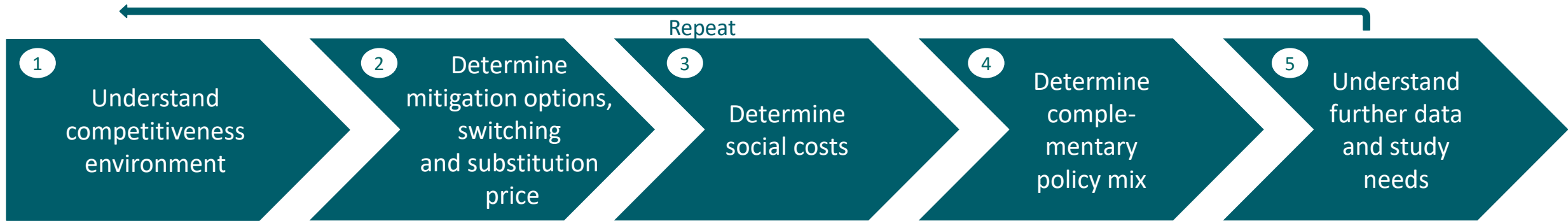


At what price would a consumer switch to a different product or import the same product



As a result of the sector potentially switching to a new product or having a declining output it would trigger social impacts that would need to be quantified

YOU WOULD NEED TO ITERATE A SET OF KEY STEPS SEVERAL TIMES: THE OBJECTIVES ARE INFORMATION DISCOVERY AND STAKEHOLDER ALIGNMENT



1. Establish range of global prices by year (“top down” e.g. EU CBAM)
2. Understand supply demand dynamics and sector vulnerability to various price levels
3. Understand exposure to international markets, via export exposure or import substitution

1. Establish decarbonization pathway options
2. Develop sector Marginal Abatement Cost curve
3. Determine Switching Price
4. Determine alternative materials and equal carbon loaded price
5. Determine likely impacts on sub-sectors where substitution is viable

All in consultation with sector. This is a “Bottom up” approach

1. Literature review and consultation with sectors and stakeholders
2. Price these social impacts and consider its addition to the base switching price

1. Literature review and consultation with sectors and stakeholders
2. Establish range of policy and other options available to reduce the base switching + social price

What do the policy measures, required to decarbonize, at a lower price, look like?

SECTOR SELECTION

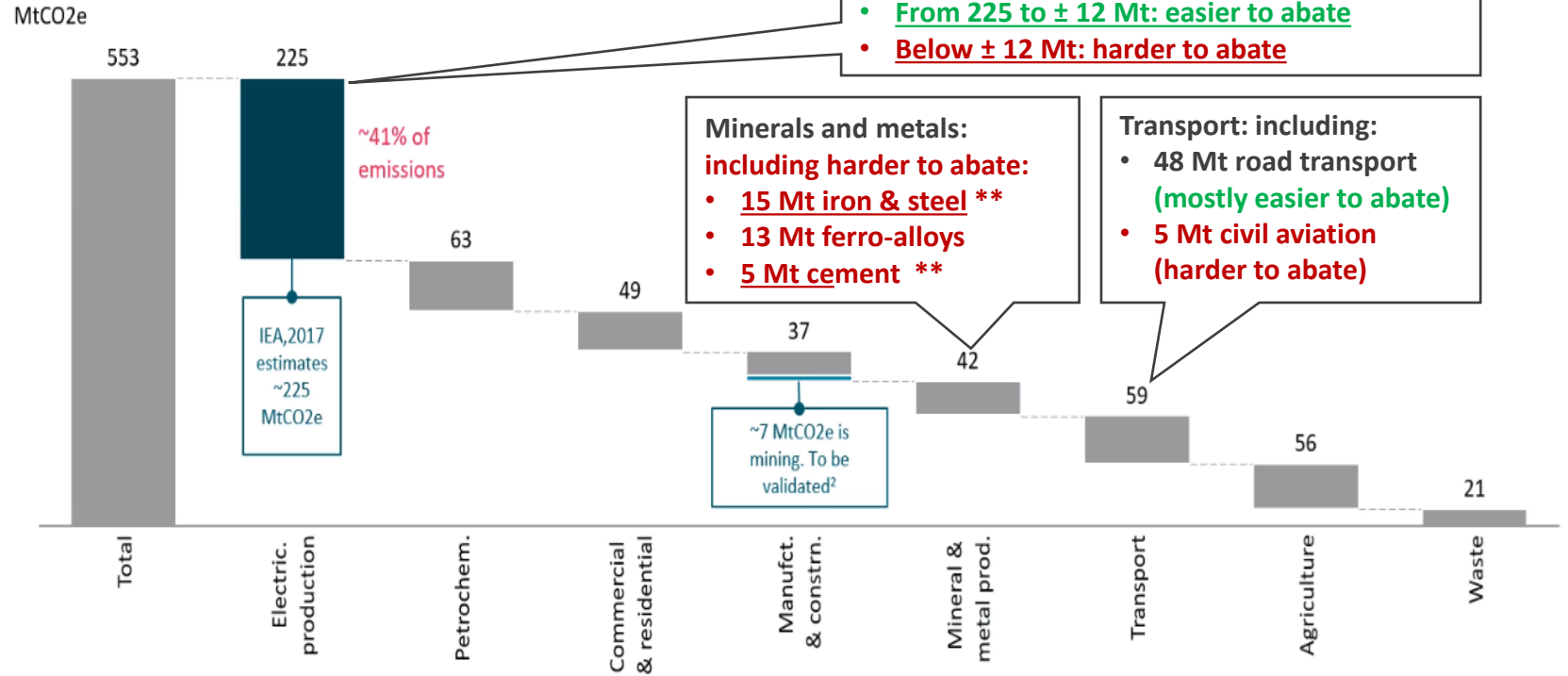
The study identified South Africa's most vulnerable sectors based on the scale of their emissions, cost of emissions abatement, ease of calculation and proportion traded globally.

Given it was a pilot we also attempted to select sectors with a range of local data and sector commitment.

We selected:

- Electricity
- Steel
- Cement

Electricity¹ generation accounts for majority of SA's CO2 emissions



Note: The Draft National GHGI was released on 11 September for public comment and includes emissions for 2017.

1. Emission figures based on view of Electricity & Heat Production of which electricity production contributes >97% of emission 2. GHGI does not explicitly state estimate for mining emissions so this has been estimated. Assumed scope 1 emissions share of top 12 companies is same as their market share (80%) and use this to gross up to 100%. To be validated with CDP data | Source: GHGI (2017) IEA (2015), WEO (2019), CDP (2015), GHGI (2015), CAT

South Africa emissions baseline based on 2017 draft national GHG inventory



LESSONS LEARNT FROM RUNNING THE PROCESS



WE NEED DATA GRANULARITY

It is hard to discuss complimentary policy with out local information, data and model availability and a strong knowledge of local data options.



THE PROCESS IS KEY TO REFRAMING SECTOR PERSPECTIVES

Companies that participated the in the process shifted to thinking of higher carbon prices as an enabler of competitiveness and accepted the probability of significantly higher prices.



SECTORS RESPOND TO DIFFERENT PRICES

Switching prices differ markedly across sectors, and mapping switching prices against set prices provides strong guidance for complimentary measures and potentially guidance for pricing strategies.

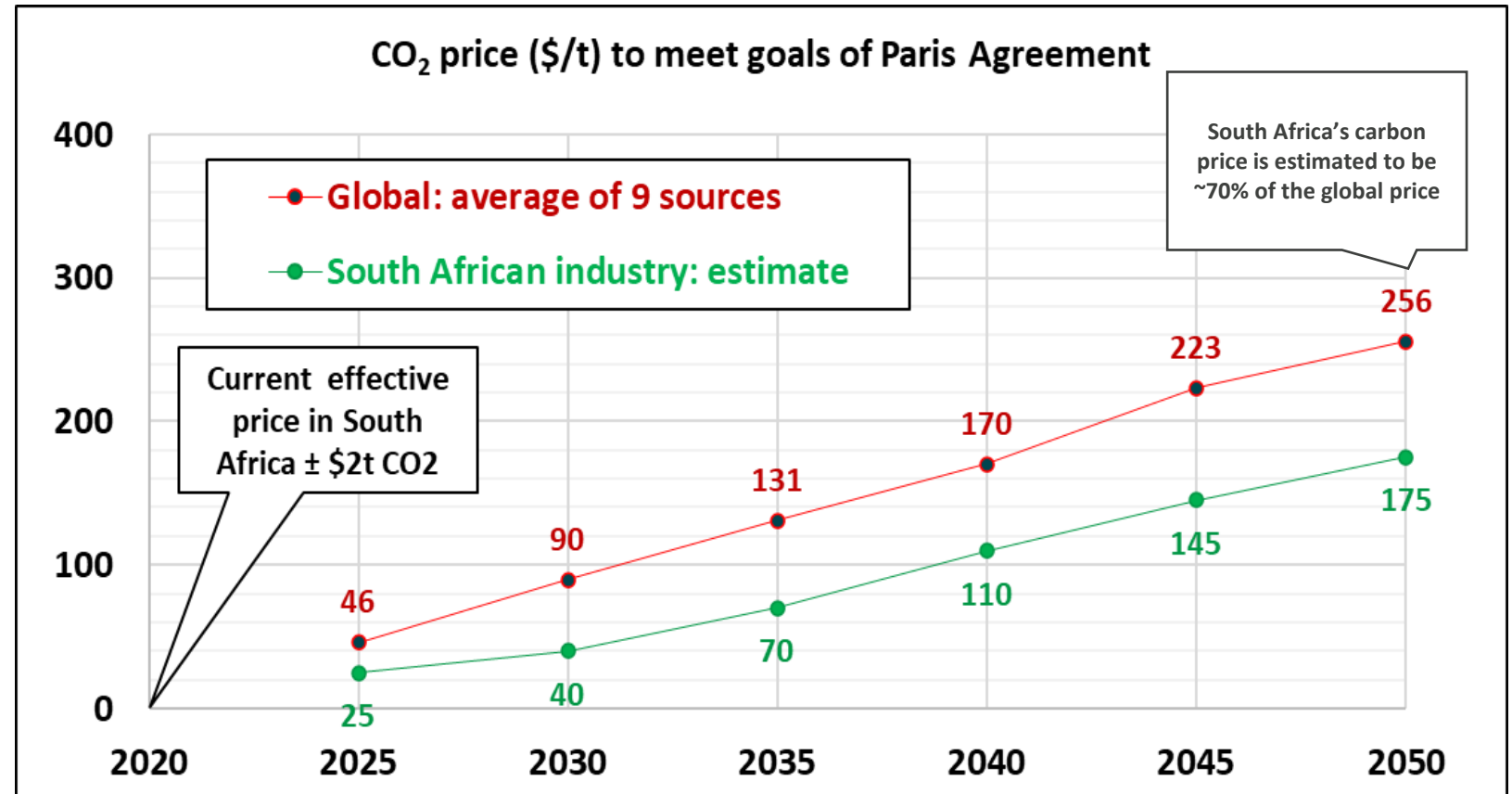


SECTOR KNOWLEDGE IS HIGHLY VARIABLE

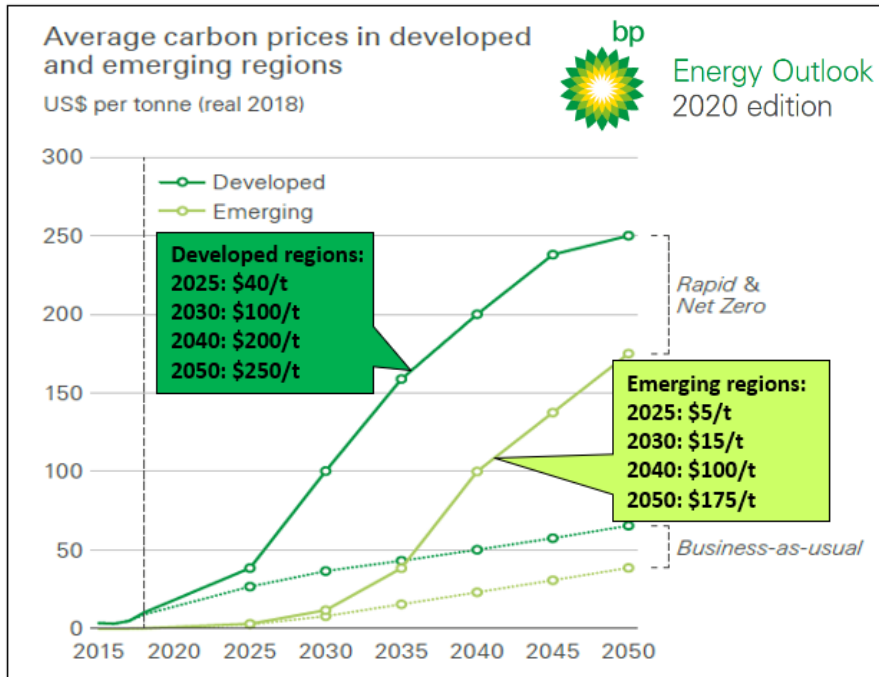
Levels of understanding of the impact of the price on competitiveness and complementary measure options varies by sector, and less mature sectors require several iterations of the methodology. The process and outputs enable a record of the conversation and a starting point for future iterations.

CARBON PRICES ARE LIKELY TO BE HIGHER THAN EXPECTED

The global average trajectory is based on **nine published global scenarios** which are compatible with the goals of the **Paris Agreement**. These numbers are much higher than the current effective cost of around \$2/t CO₂ (that is a headline rate of \$8/t CO₂ less allowances).



EMERGING VIEWS ON SECTOR PRICE DIFFERENTIATION



Differentiated by sector to reflect different marginal abatement costs and technology readiness and **domestic/regional**, i.e significant carbon price applied to cement (domestically traded) same level NOT applied to steel . There are different marginal abatement costs by sector, which means that the **resulting prices may be far too low to provoke change in the higher-cost sectors**



Climate policies will vary and consider national and local circumstances. In lower-income countries (**prices**) may **actually be lower than the ranges proposed** in order to consider **national circumstances** (related to adjustment costs and market failures, distributional impacts, social and political acceptability). **Carbon prices will differ across countries and narrow over time**

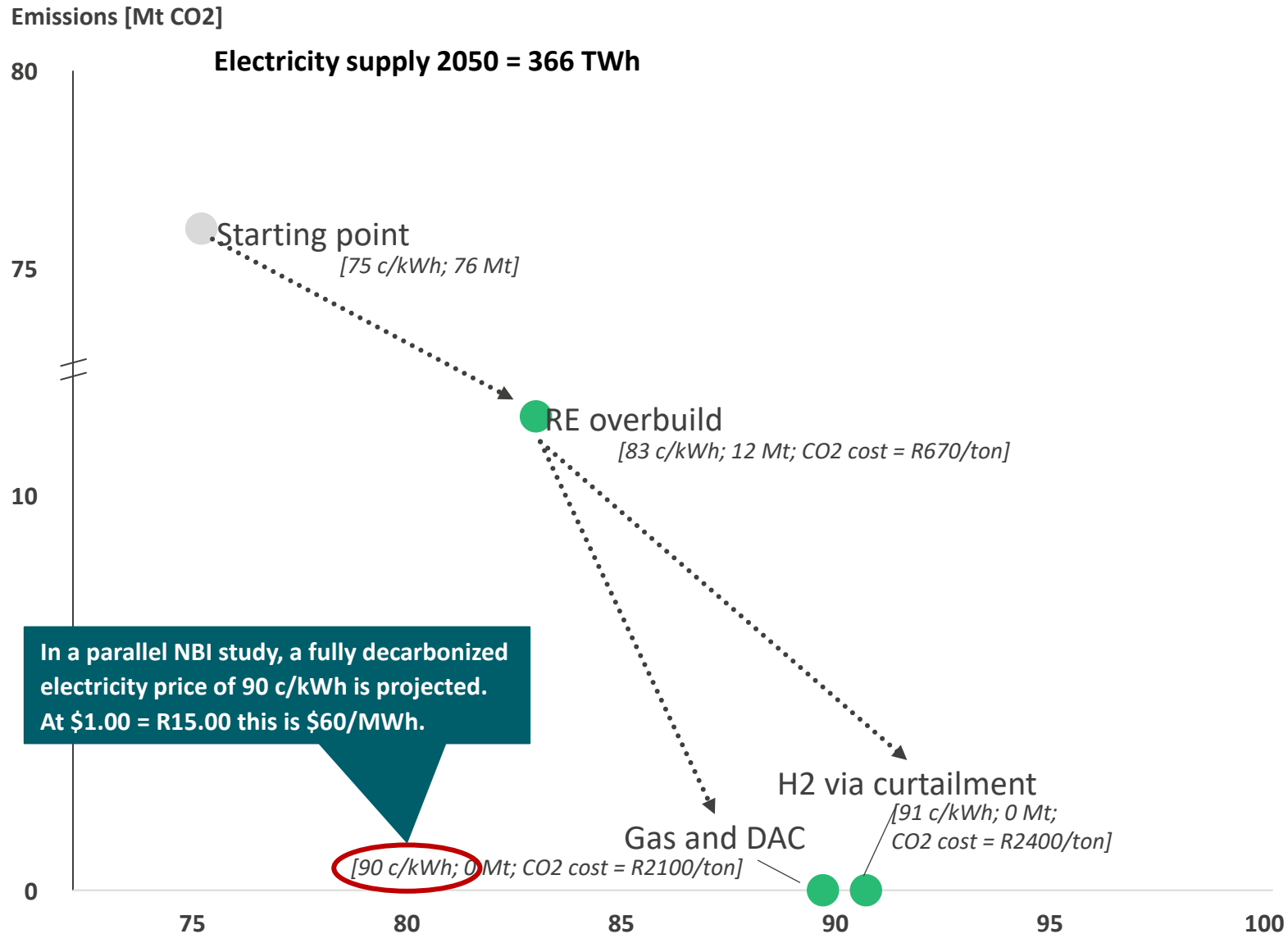


Sectors have been treated differently under the EU ETS with a price **difference between 14% to 58%**. Electricity sector is deemed **easier-to-abate and receive fewer Free allocations**. The steel and cement sectors have **high proportion of emission, and on the “high risk of carbon leakage list”** and have received 100% Free allocation to date



Efficiency of carbon price is reduced the greater the **divergence of carbon prices** within the economy

Net-zero by 2050 in the electricity sector is possible at relatively low prices, initially no carbon price is needed

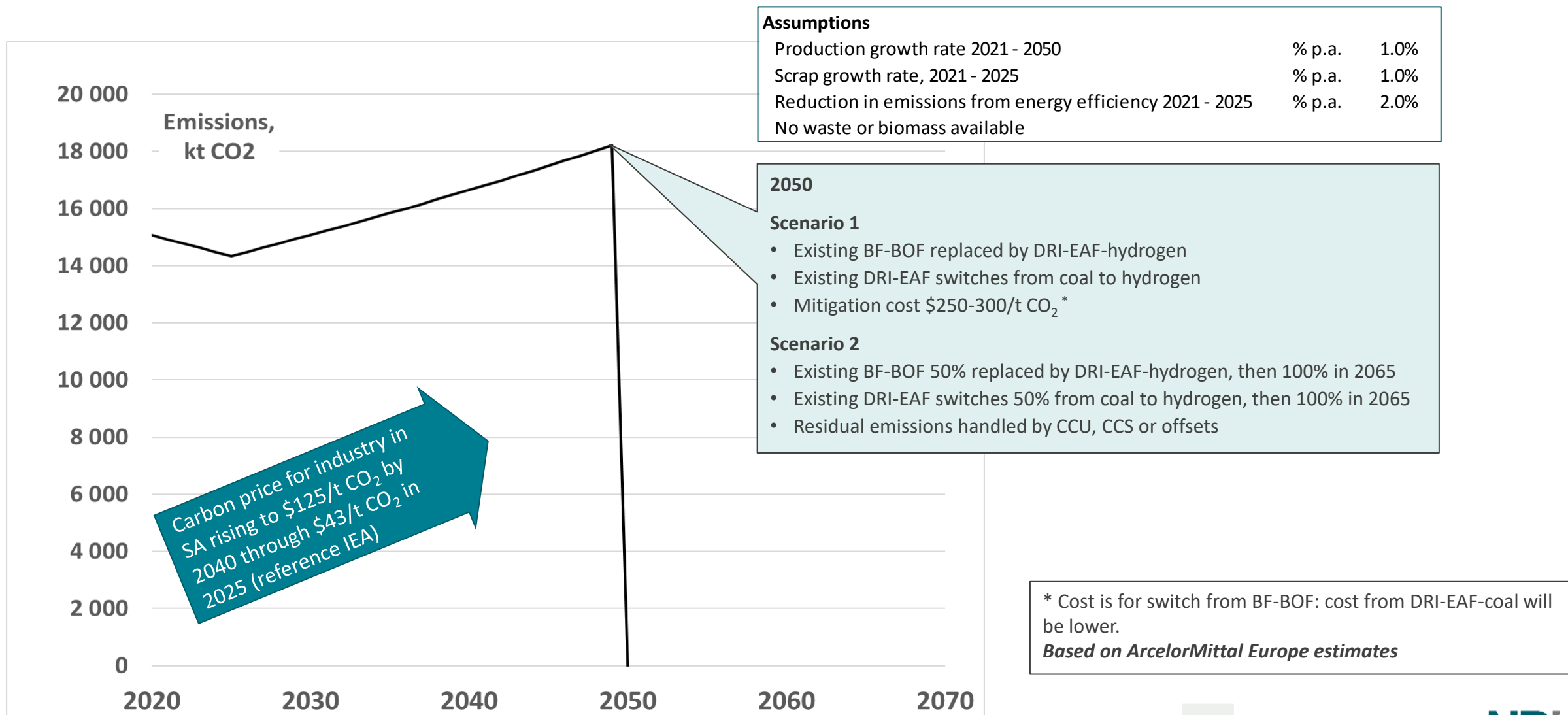


Provisional numbers

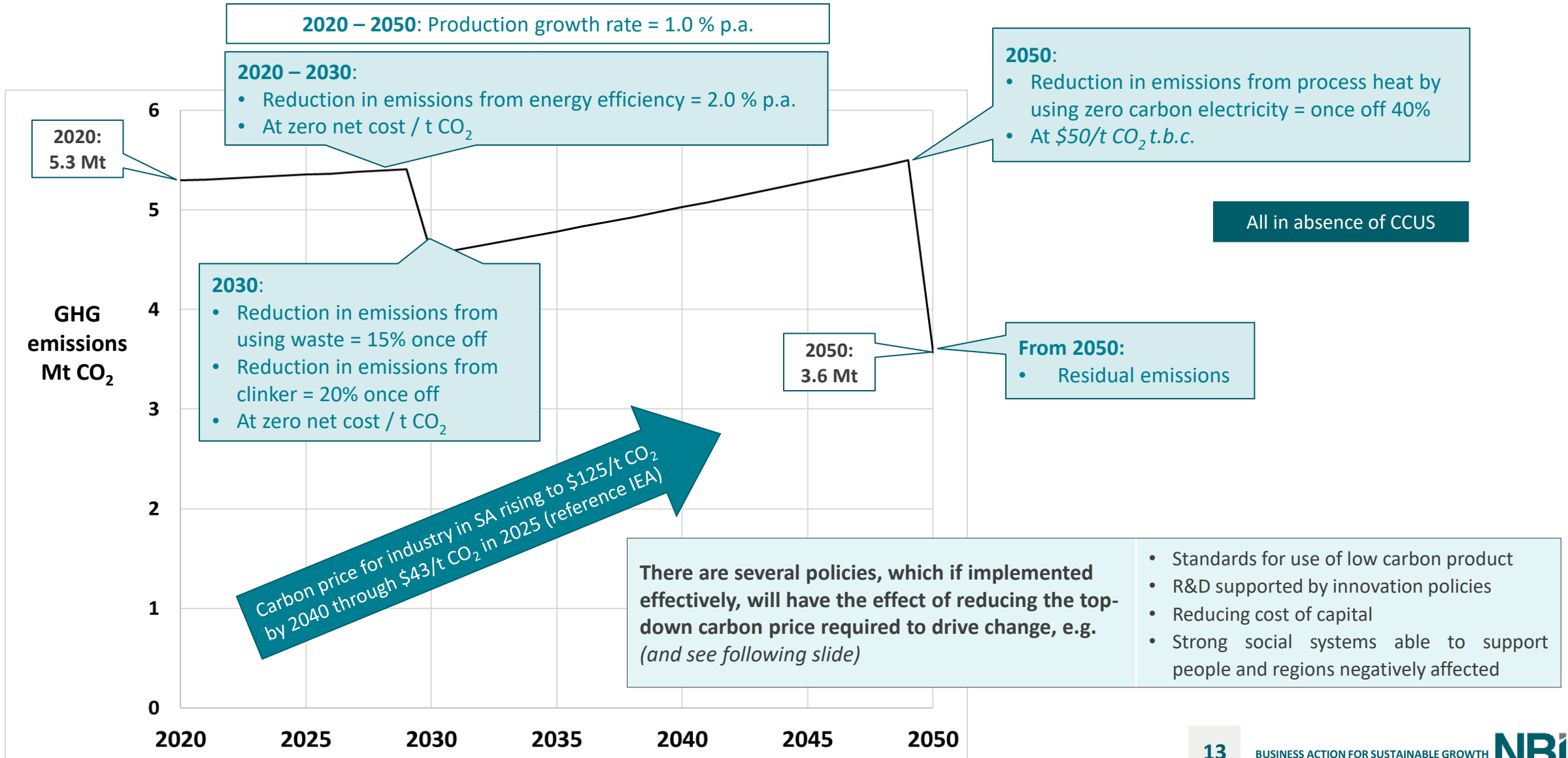
In a parallel NBI study, a fully decarbonized electricity price of 90 c/kWh is projected. At \$1.00 = R15.00 this is \$60/MWh.

Source NBI-BCG-BUSA Just Transitions Pathways Project, 2021

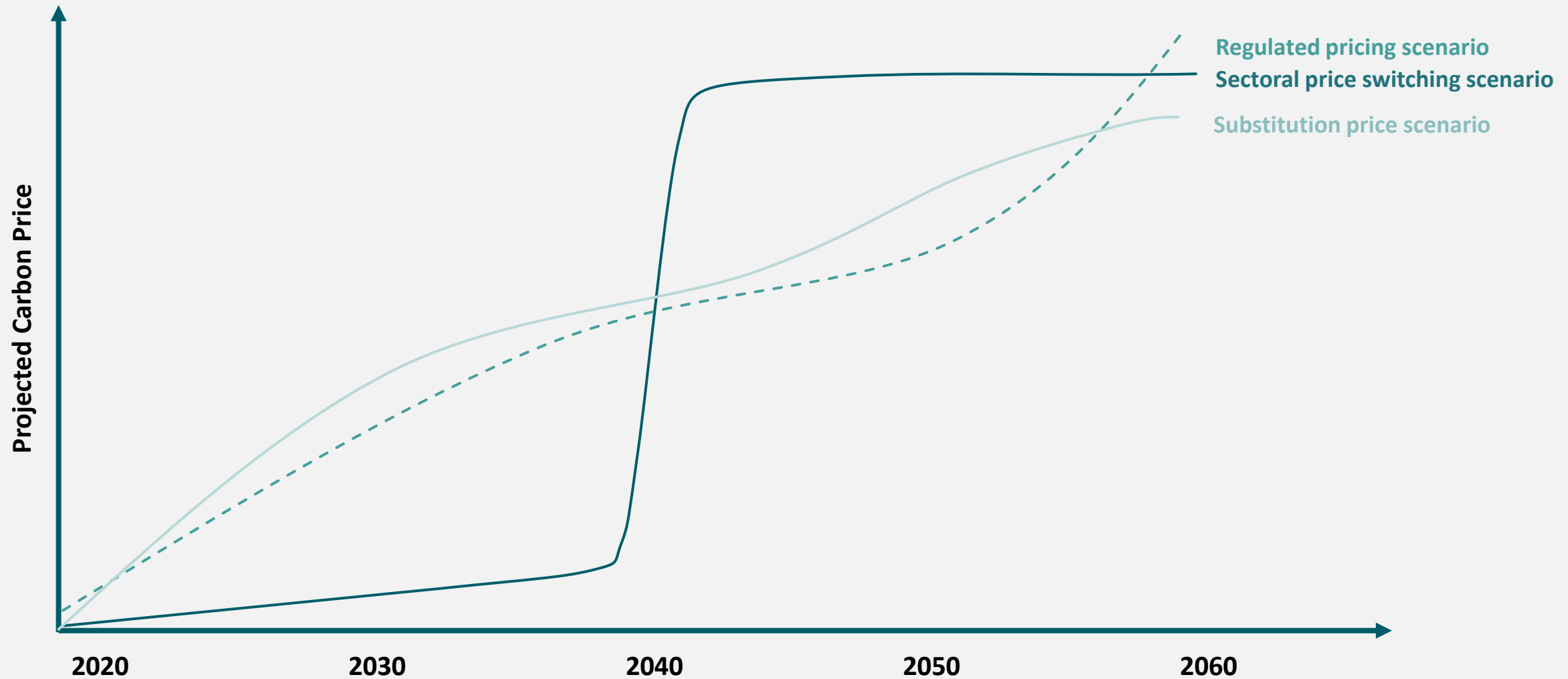
Net-zero carbon emissions in the steel sector is feasible at high prices that incentivize a switch to hydrogen



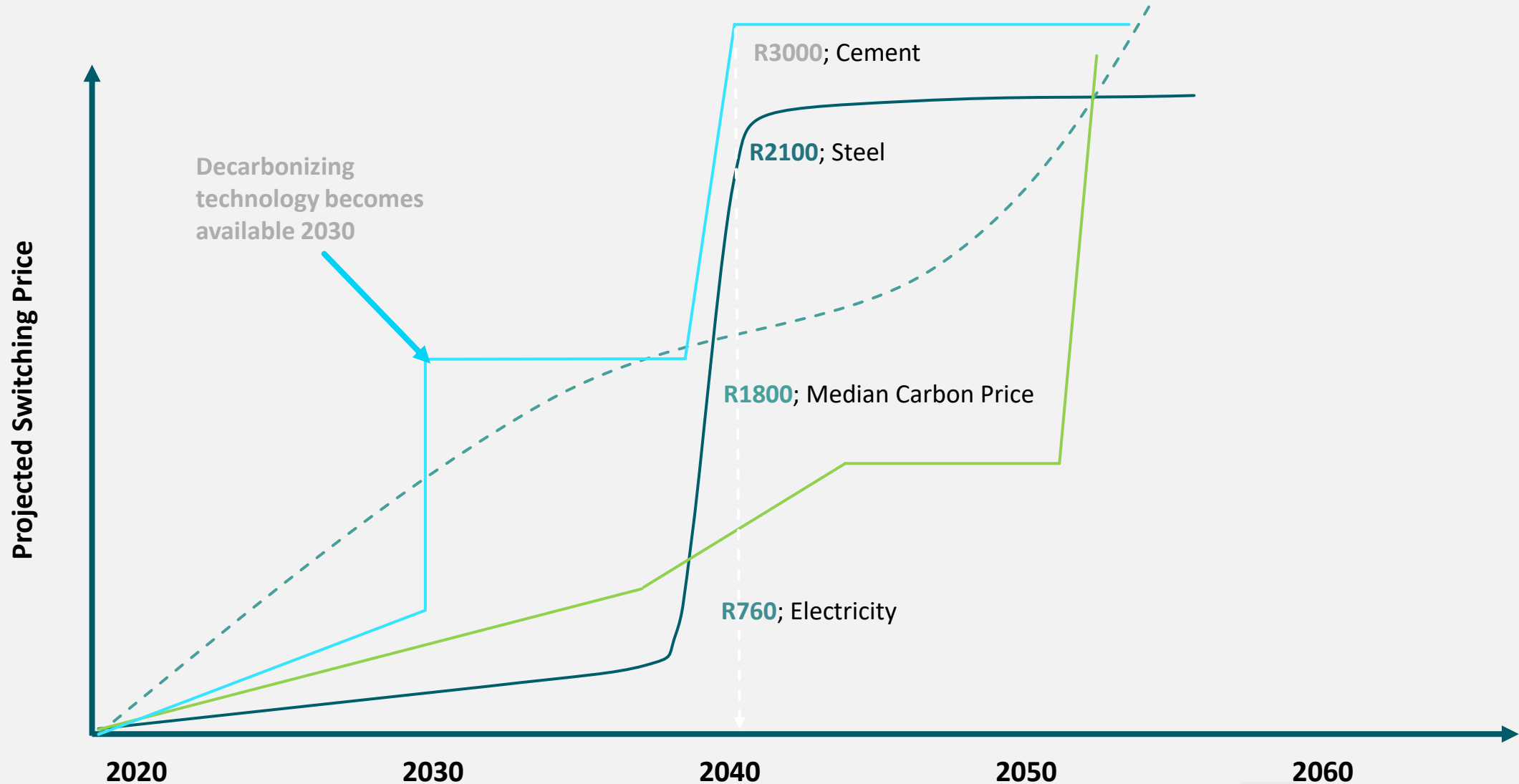
It is not clear how we would decarbonize the cement sector, at any carbon price. Global sequestration and utilization options are critical.



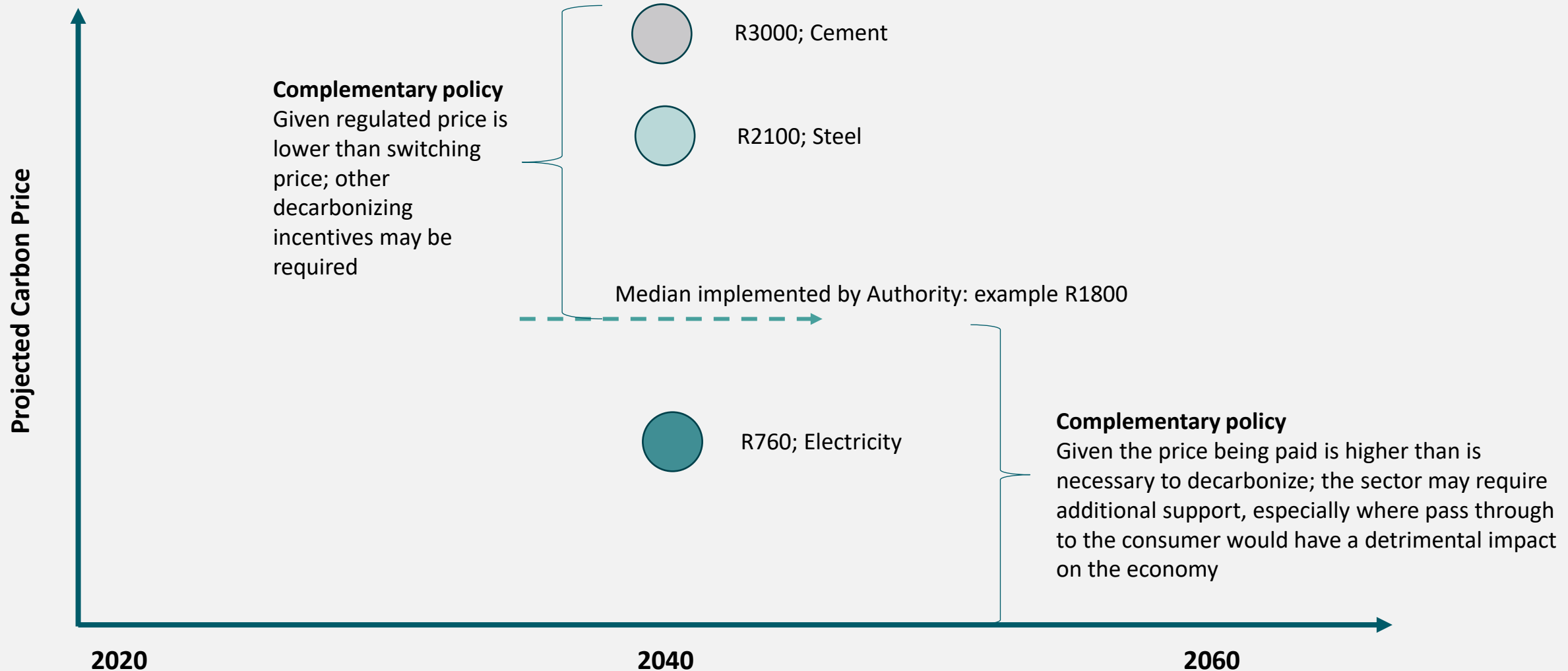
TOGETHER SWITCHING PRICES, SOCIAL COSTS AND SUBSTITUTION PRICES WOULD PROVIDE THE INFORMATION NEEDED TO ASSESS DECARBONISATION POTENTIAL AND COMPETITIVENESS IMPACTS



POLICY PRICING STRATEGIES INCLUDE ADOPT A MEDIAN PRICE WITH COMPLEMENTARY POLICY OR ADOPT DIFFERING PRICES PER SECTOR VIA ALLOWANCES



PRICE POINTS AT A PARTICULAR TIME HELP GUIDE COMPLIMENTARY POLICY – FOR EXAMPLE TO EITHER DRIVE MITIGATION OR PROTECT COMPETITIVENESS



We were really pleased with how the project went; however, we didn't get to everything that we wanted to, and iterations of the methodology are clearly required.

NEXT STEPS

01

Develop a better understanding of substitution pricing across the sectors

02

Develop a better understanding of social pricing across the sectors

03

Work with government partners on other sectors; aligned with the NBI Just Transition Pathways work

QUESTIONS AND DISCUSSION



NBI MEMBERSHIP



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