Assessing Comparable Effort

How to ensure individual developed countries' mitigation commitments and actions represent a fair level of effort

New Zealand presentation to the AWG-LCA workshop: 1 April, Bonn.
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Assessing Comparable Effort (ACE) Framework

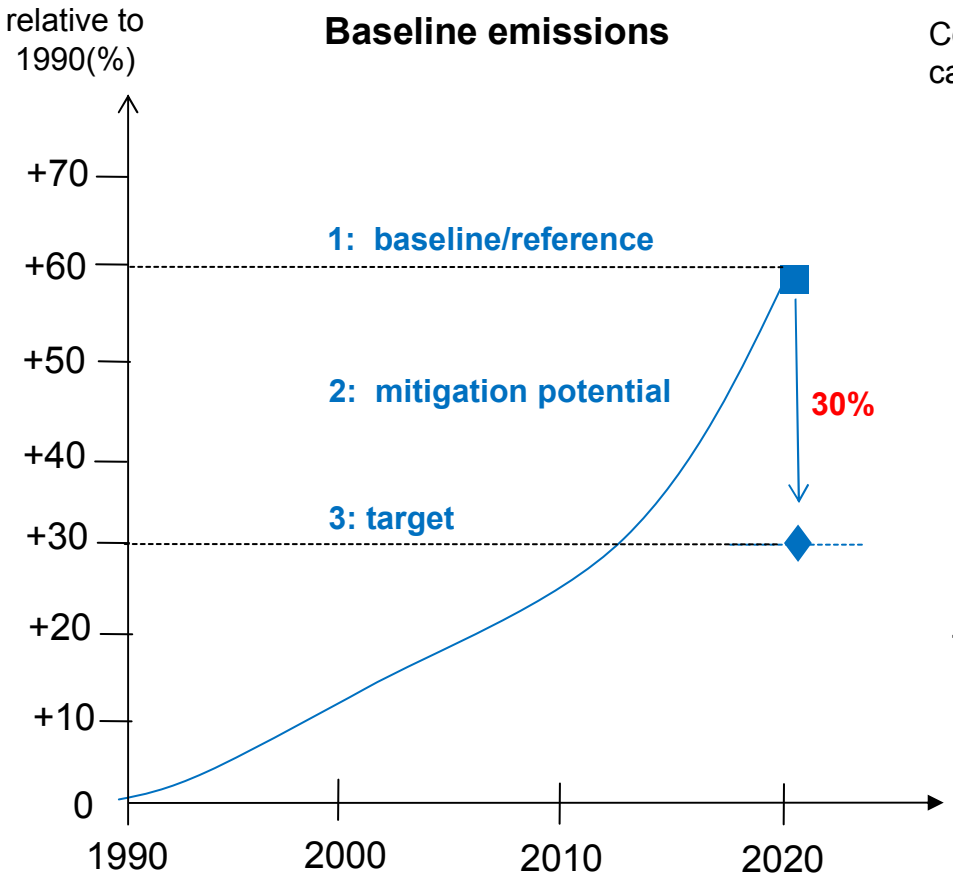
1) The concept of effort being measured in terms of the costs faced by a country in meeting a specific target is widely accepted

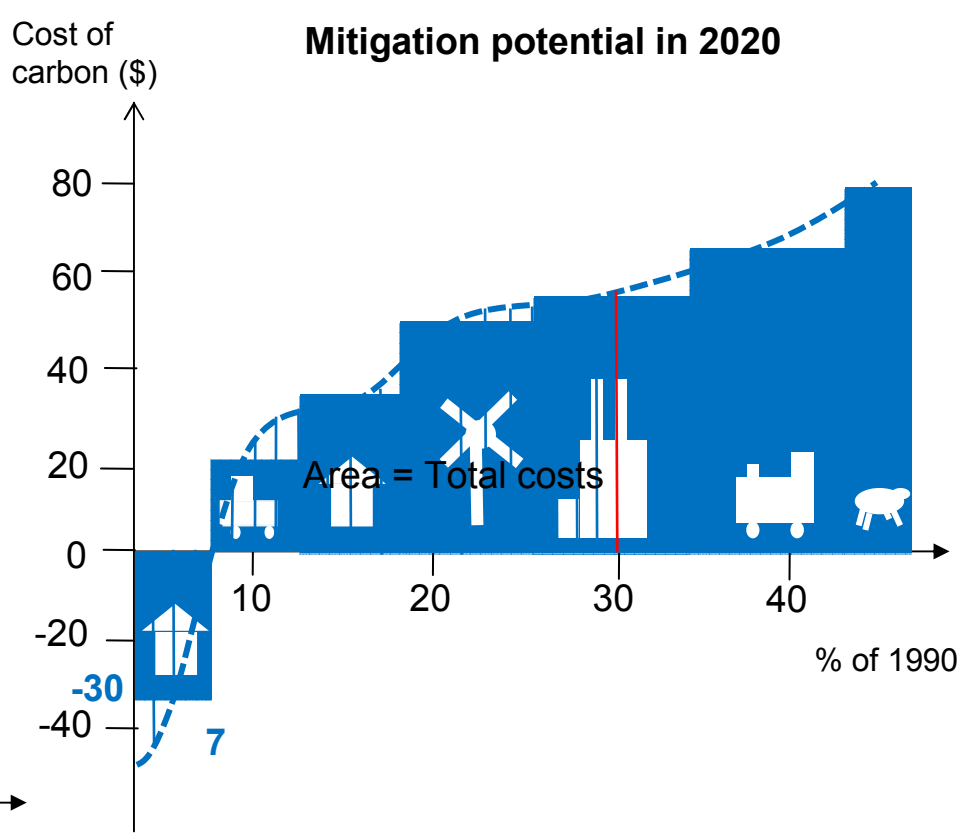
2) Estimating these costs for each country requires understanding of:
   a) where their emissions would be *without* any effort (baseline)
   b) their domestic potential to reduce emissions

3) In addition to cost, other criteria and indicators could be integrated, to ensure comparability with Article 3.1

4) Approach is applicable to developing country NAMAs, and would be useful in ensuring a quantified global emission pathway

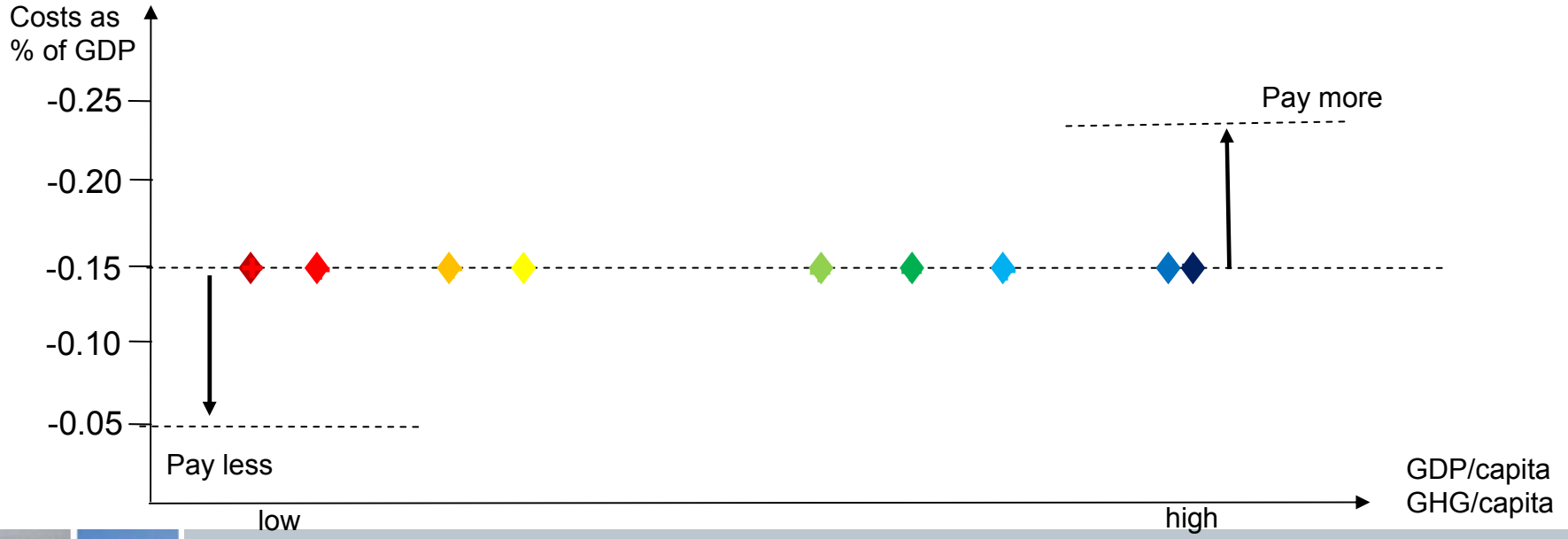

Estimating the costs of meeting a target



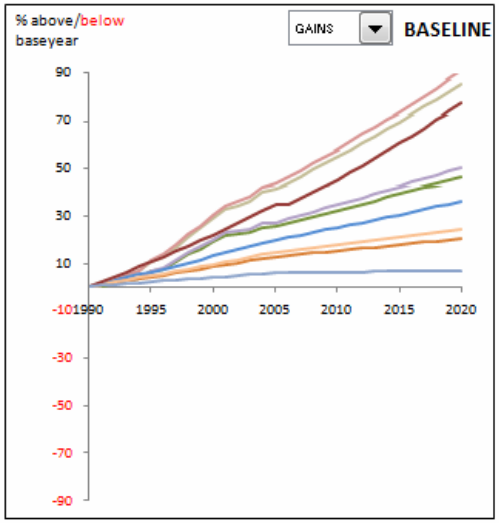


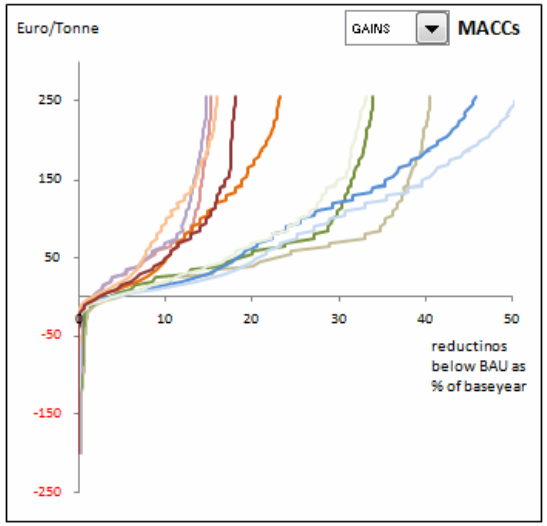
Integrating broader equity principles

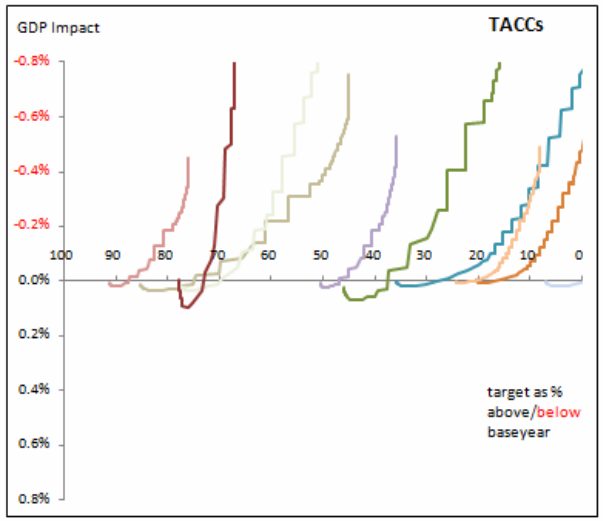
- Understanding the total costs as a % of GDP enables a transparent assessment of the effort a country takes in undertaking action
- Other criteria are also important, in recognition of CBDR and RC

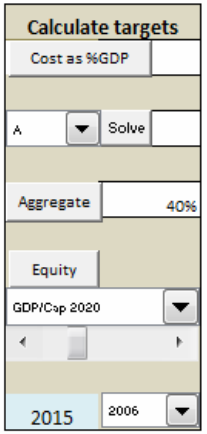


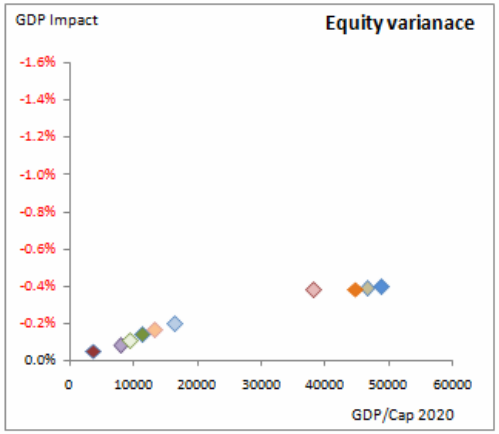
Assessing Comparable Effort - Interactive Support Tool (ACE-IST)

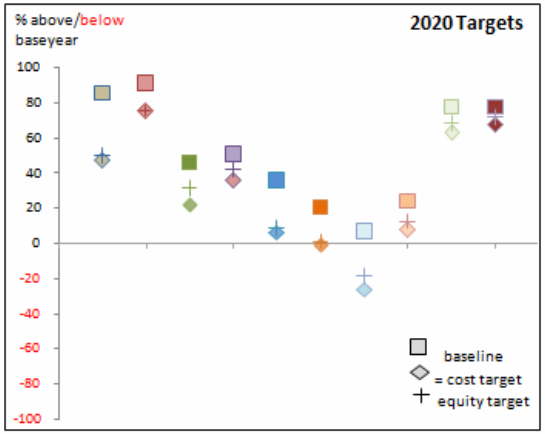












PARTY	2020 Target	percapita	% GDP	2015 Target
A Fix	50%	-19%	-0.39%	47%
B Fix	76%	-8%	-0.38%	65%
C Fix	31%	-10%	-0.14%	29%
D Fix	42%	-6%	-0.09%	37%
E Fix	8%	-20%	-0.40%	12%
F Fix	1%	-16%	-0.39%	5%
G Fix	-18%	-24%	-0.20%	-10%
H Fix	13%	-9%	-0.17%	13%
I Fix	68%	-5%	-0.11%	57%
J Fix	72%	-3%	-0.06%	59%
TOTAL	40%			25%

Conclusions

1) Baseline emissions are a key input into determining fair targets

2) Domestic mitigation potential must be taken into account

3) Capability and responsibility need to be considered

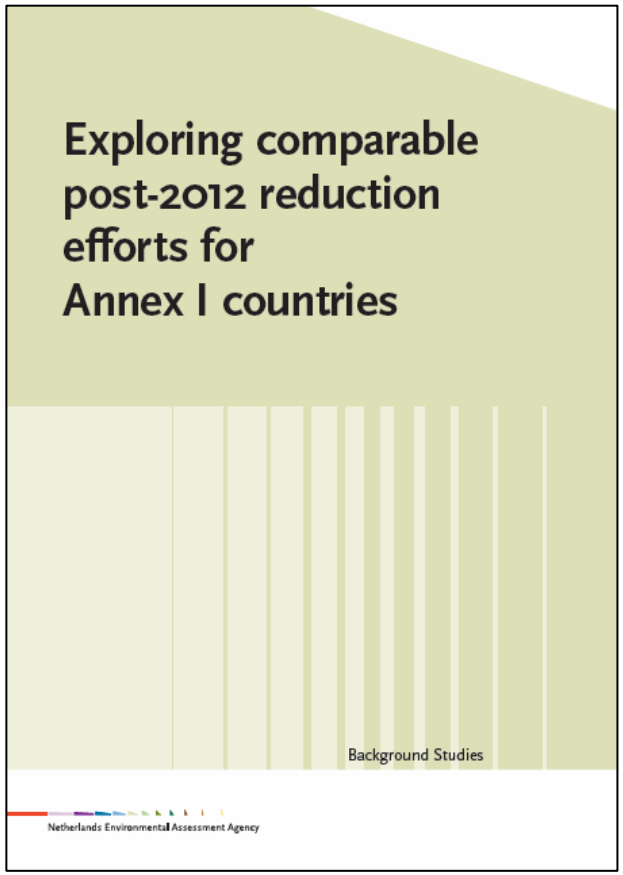
4) We welcome *all* developed countries to present baselines and MACCs, and views on how to integrate CBDR & RC

5) Once all countries have done this it will be important to sum up the effort, and ensure consistency with a long-term global goal.


ANNEX

1) Front page of ACE-IST
2) Independent studies on comparability using costs
3) Example of calculating costs using two hypothetical countries

Netherlands Environmental Assessment Agency



Netherlands Environmental Assessment Agency

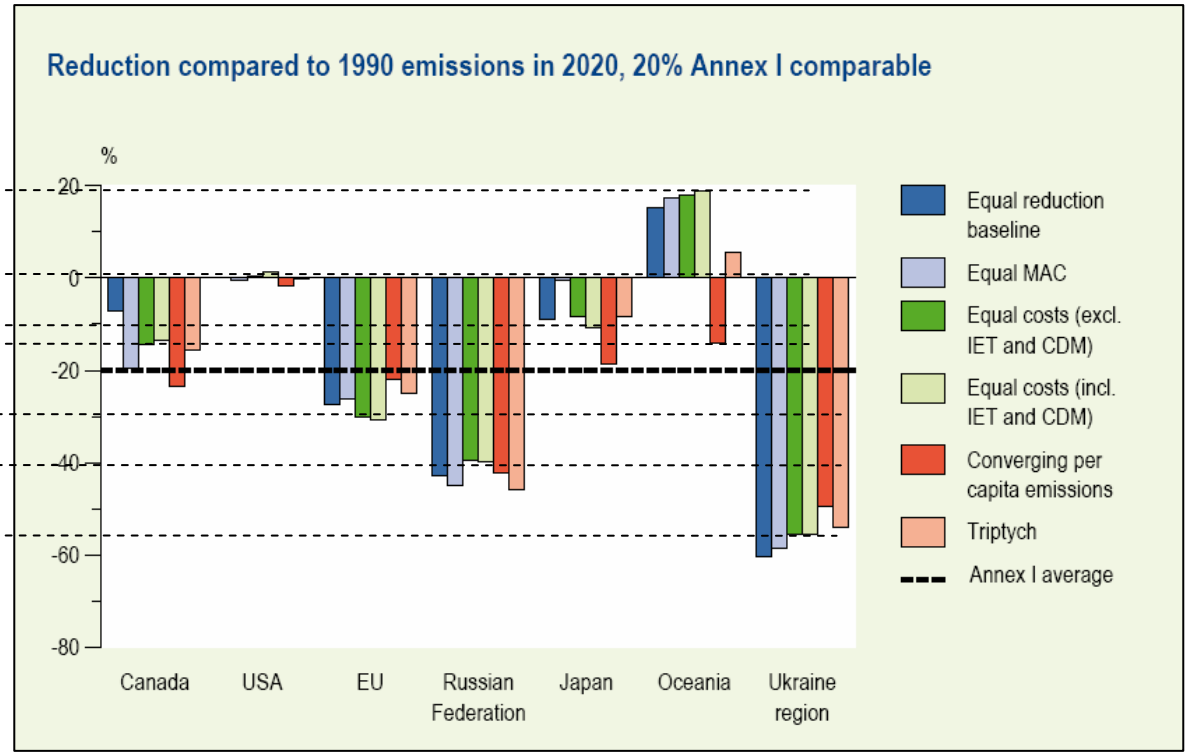
Two conceptual approaches for “comparable efforts” :

1. Equal effort: based on country’s sharing the effort or burden according to a defined indicator.
   - Efforts are needed to change the current state or to change a likely baseline or reference development
   - For example, equal reduction below BAU, equal MAC and equal costs as %-GDP
2. Equal endpoint: the countries’ effort is based on achieving the “*same state in the future*”
   - For example, equal emissions intensity per sector, or per capita emissions, Triptych.


Netherlands Environmental Assessment Agency

Results for countries are relatively similar under each approach

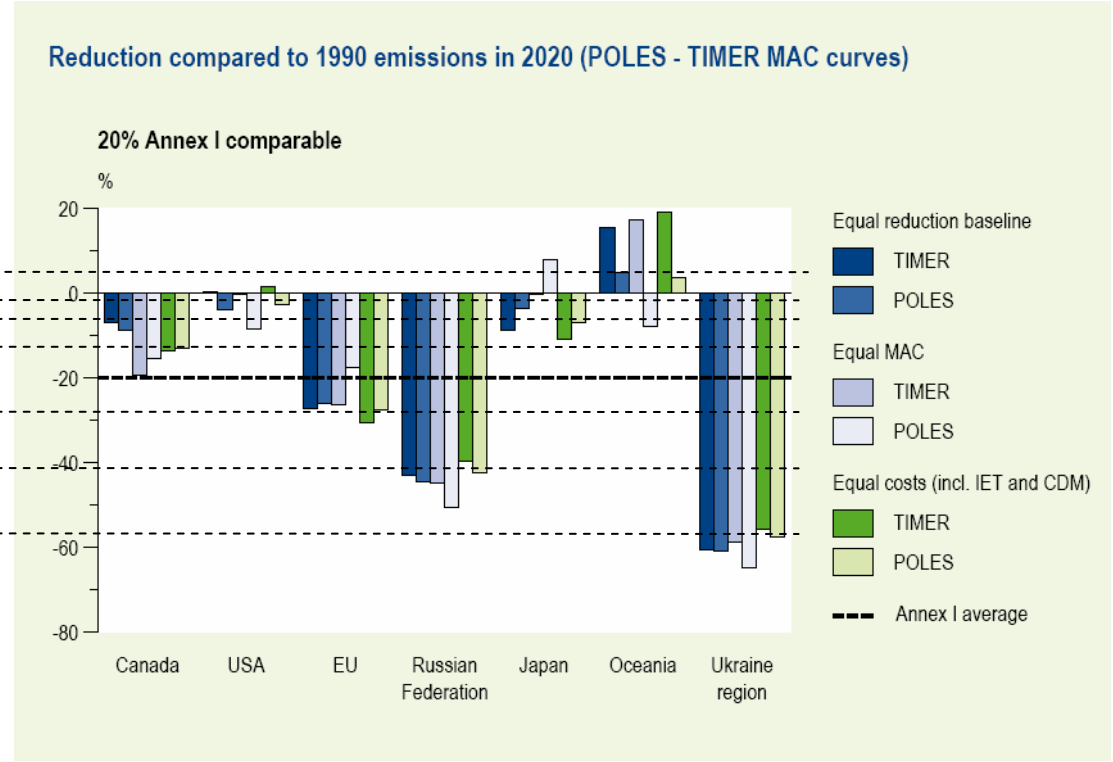
AUS/NZ = +19%
USA = +2%
JAPAN = -15%
CANADA = -17%
EU = -30%
Russia = -40%
Ukraine = -55%




Netherlands Environmental Assessment Agency

The results change for some countries using different models

AUS/NZ = +5%
USA = -2%
JAPAN = -7%
CANADA = -12%
EU = -28%
Russia = -42%
Ukraine = -58%



Netherlands Environmental Assessment Agency

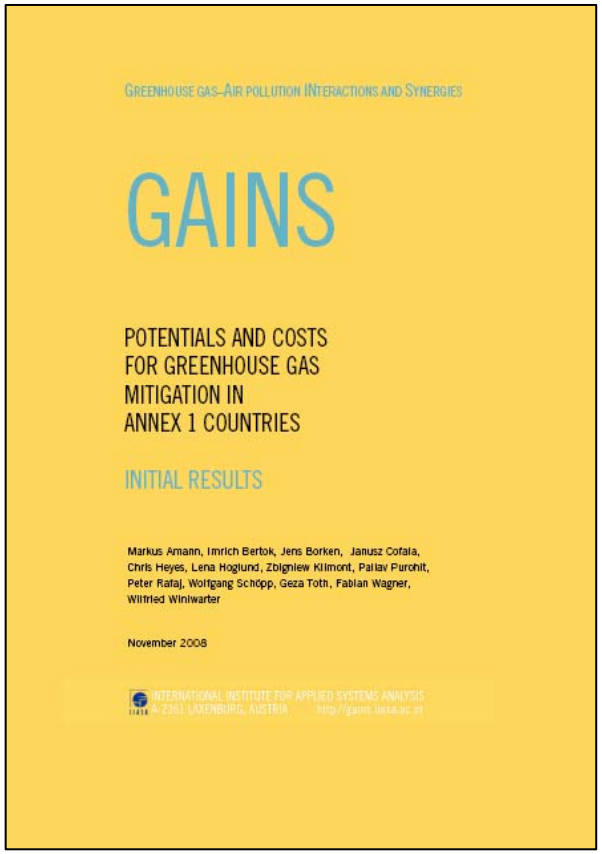
Strengths of approach

- Uses a range of different criteria
- Uses sensitivity analysis to show how different models change results
- Generates a set of (relatively) independent results

Weaknesses of approach

- Only uses 2 models in their sensitivity analysis
- No transparency of underlying data
- Does not integrate criteria – i.e. only cost, or only GHG/capita
- Does not provide results for smaller countries – like New Zealand


International Institute for Applied Systems Analysis




International Institute for Applied Systems Analysis

Large independent modelling exercise

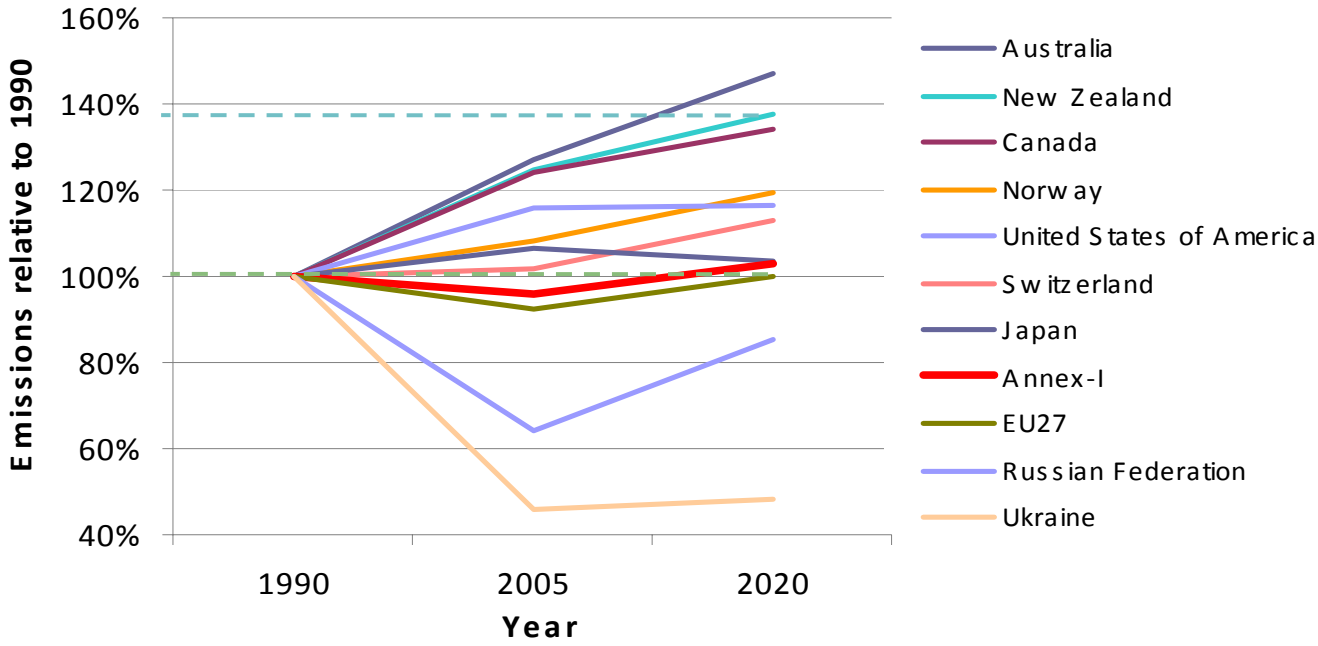
Post-2012 targets (2020) for Annex 1 Parties are based on the costs of meeting the target, as a % of GDP

The primary inputs to this model are:

- Baseline projections in 2020
- Marginal abatement costs in 2020
- GDP projections in 2020


International Institute for Applied Systems Analysis

Baseline projections out to 2020



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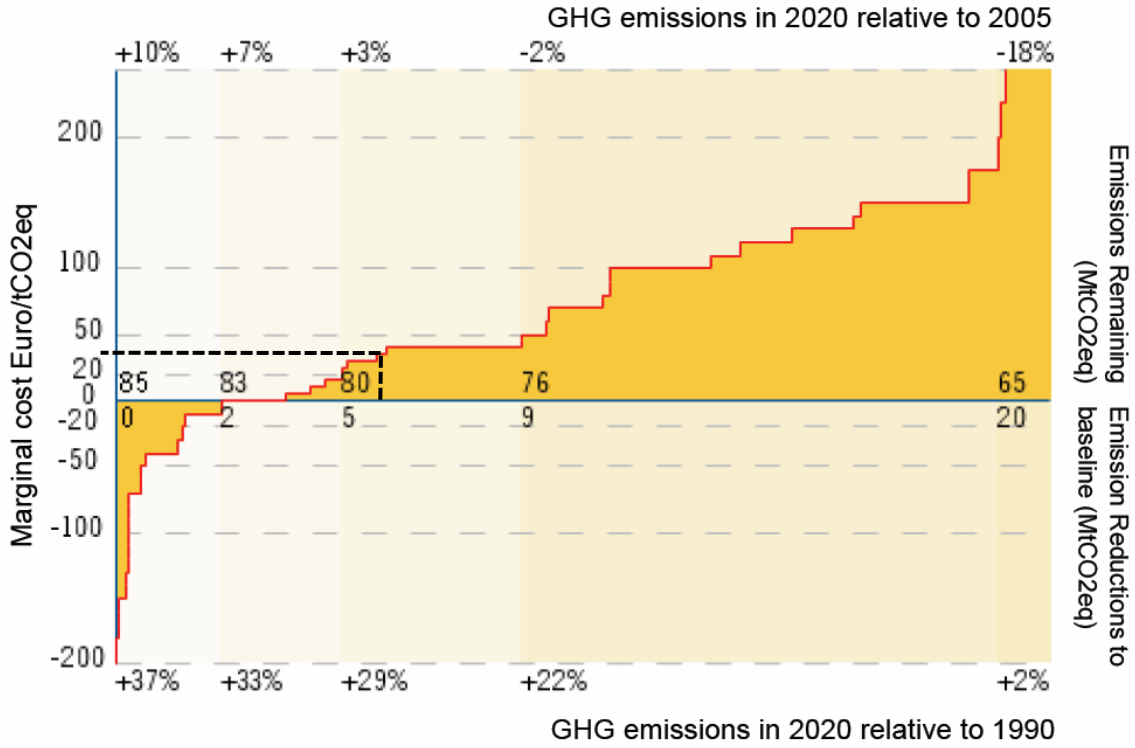
Mitigation costs in 2020



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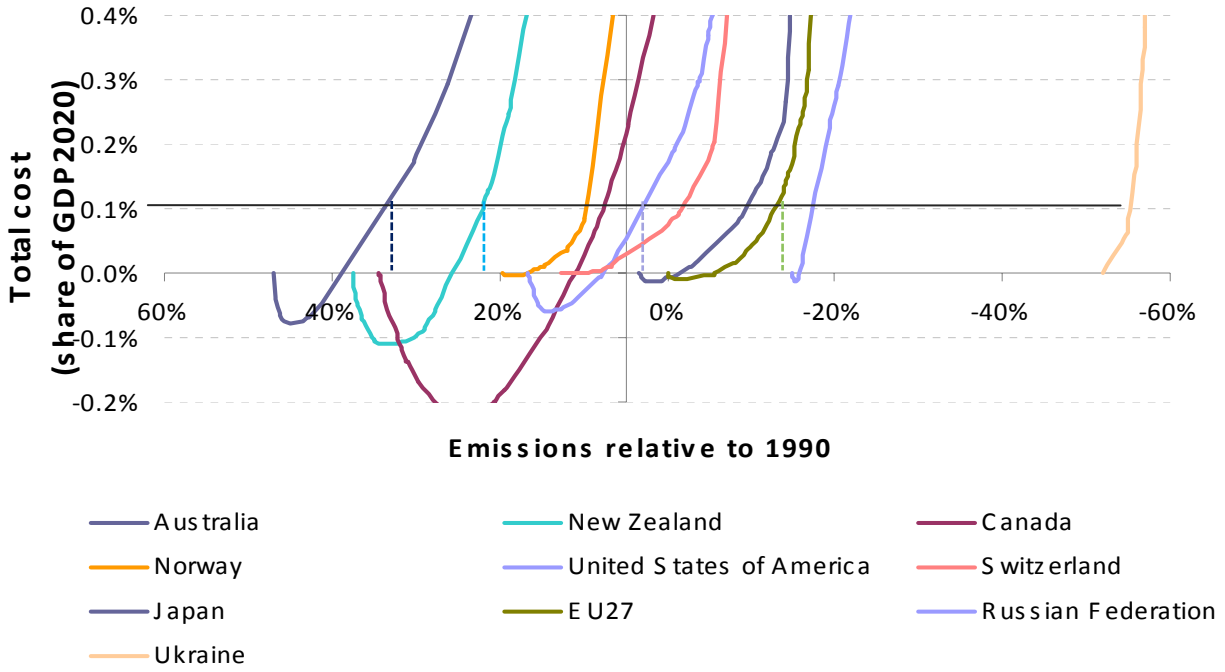
Using the total cost of abatement define targets as % of GDP



International Institute for Applied Systems Analysis

Strengths of approach

- Data is publicly available
- Measures the cost of meeting targets – a key factor in assessing equity
- Requesting from Parties more accurate data

Weaknesses of approach

- Focuses only on costs
- Underlying MACC data has been questioned, in some cases


Assessing Comparable Effort (ACE) Framework

- Within the negotiations there is a need for a framework within which effort can be measured

- The concept of effort being measured in terms of the costs faced by a country in meeting a specific target is widely accepted

- However, other criteria also need to be integrated, to ensure compatibility with Article 3 of the Convention.

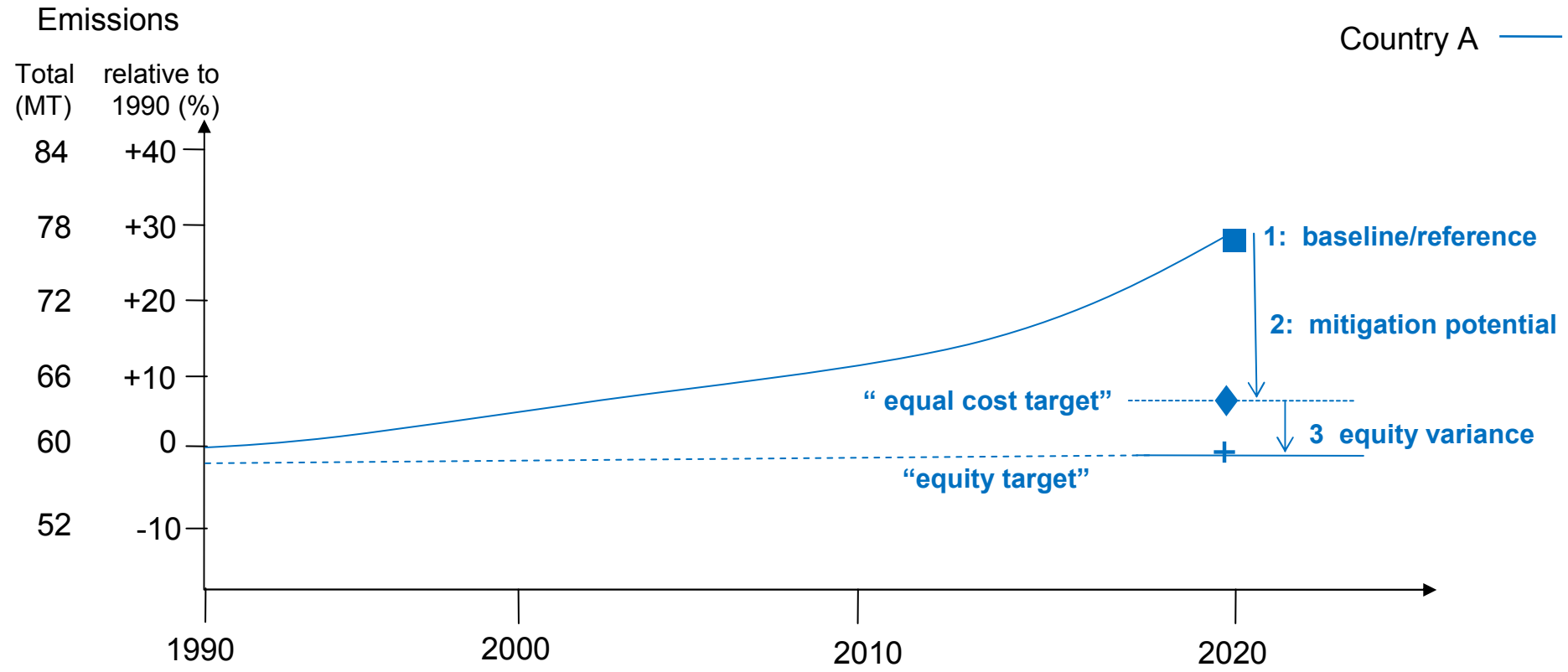
- Initial presentation on this framework in Poznan (see UNFCCC)


Assessing Comparable Effort (ACE) Framework

The ACE framework uses a simple three step process to assess the comparability of individual countries' targets:

1) Develops a 2020 baseline/reference scenario for emissions
2) Estimates the costs of reducing emissions below this baseline
3) Integrates relative wealth/responsibility indicators


Assessing Comparable Effort (ACE) Framework



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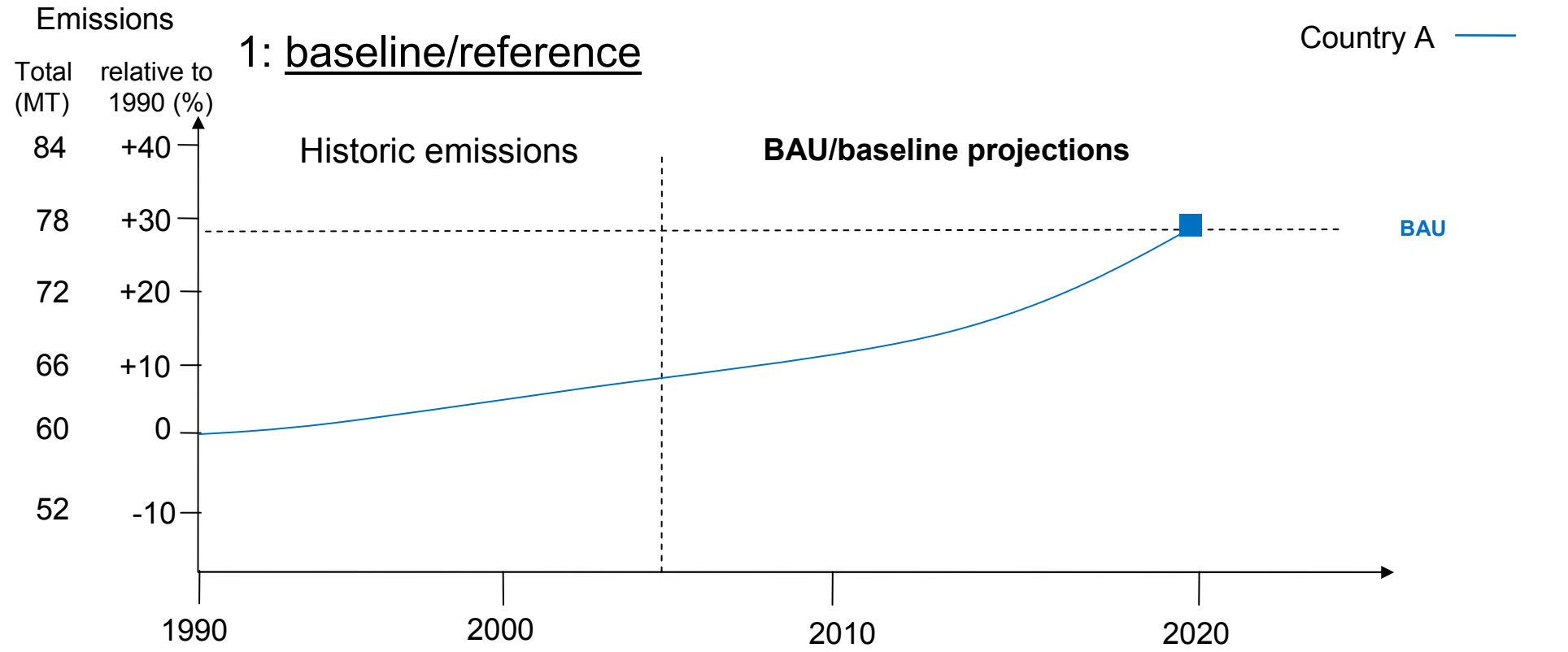

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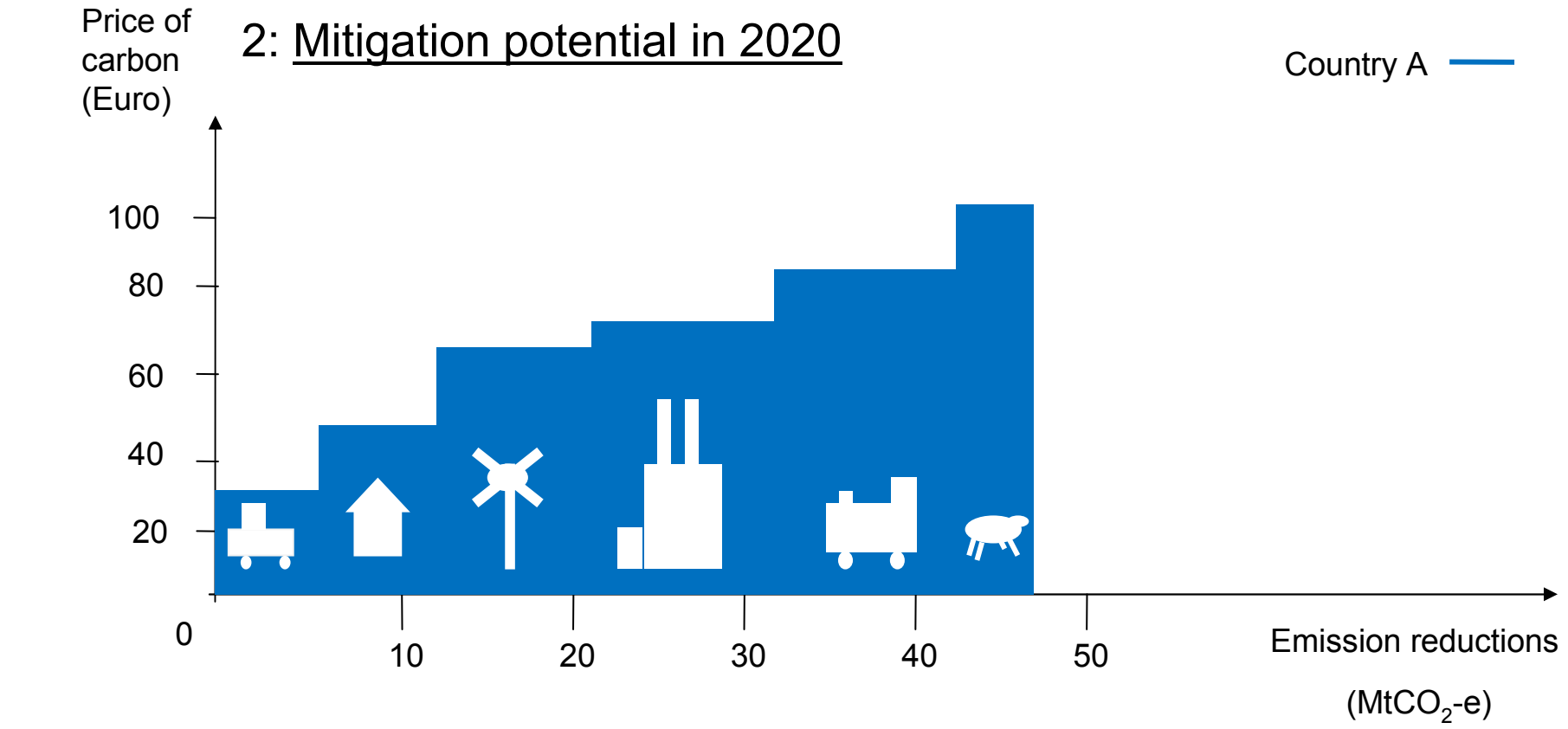

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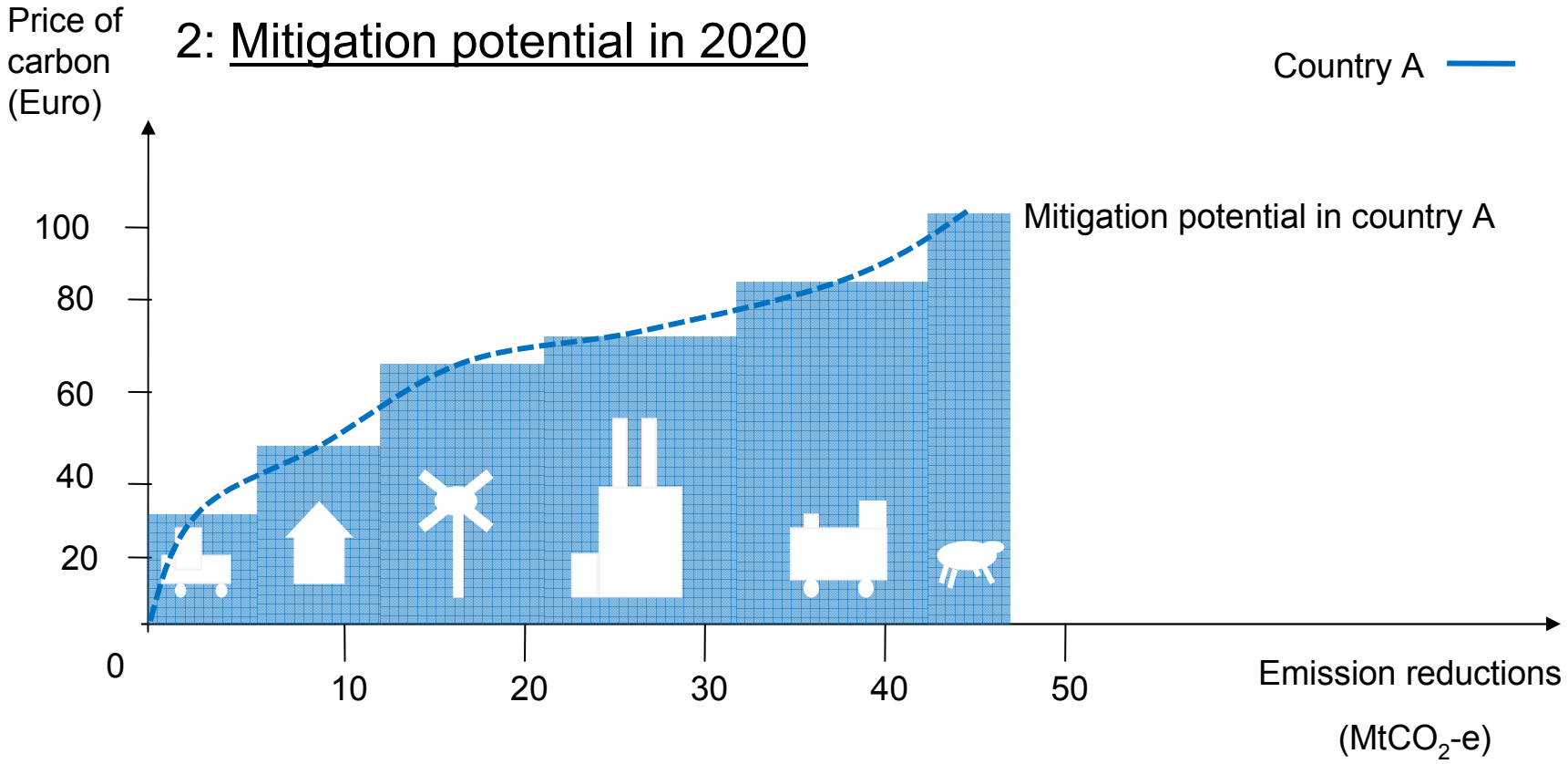

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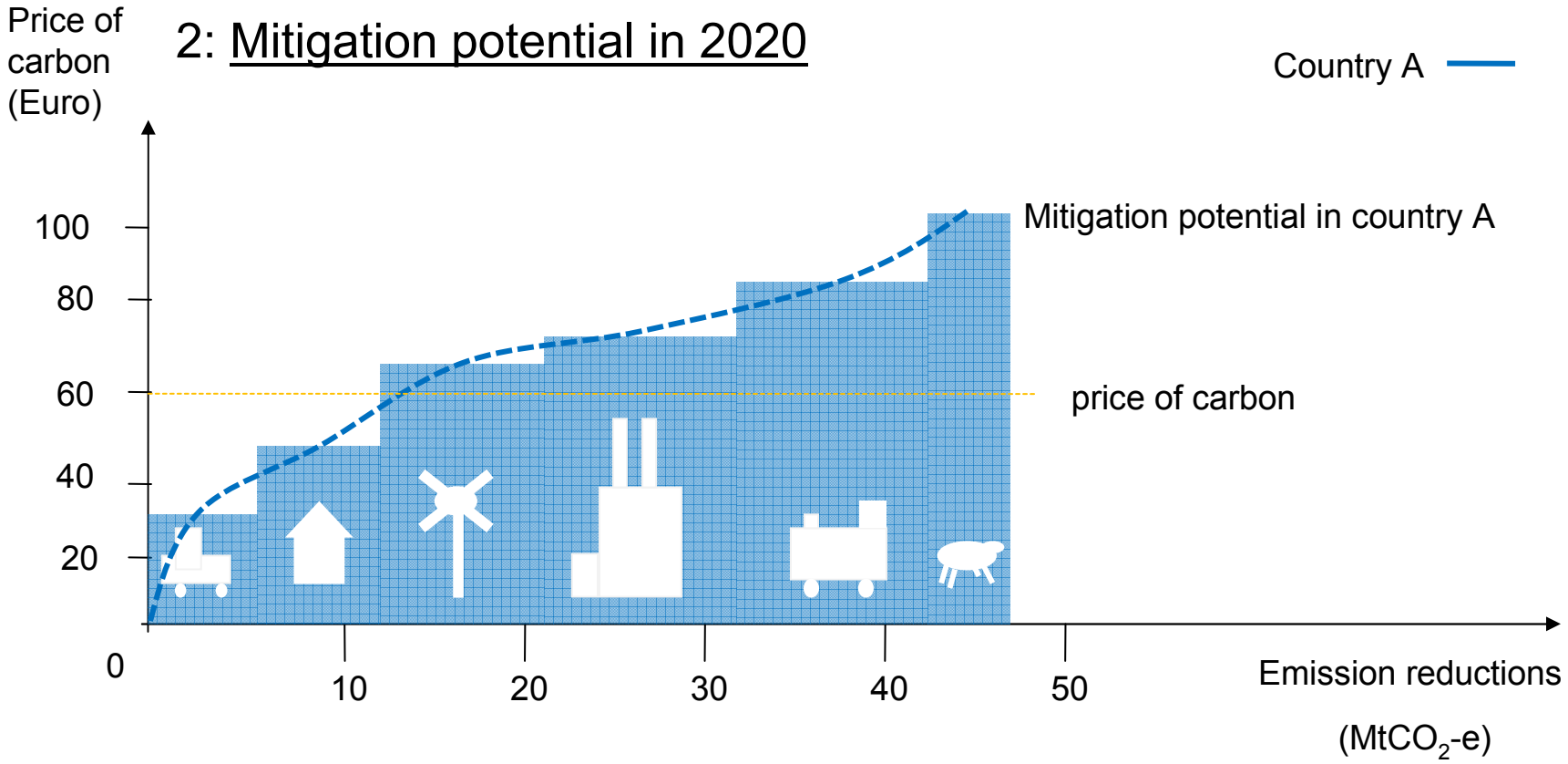

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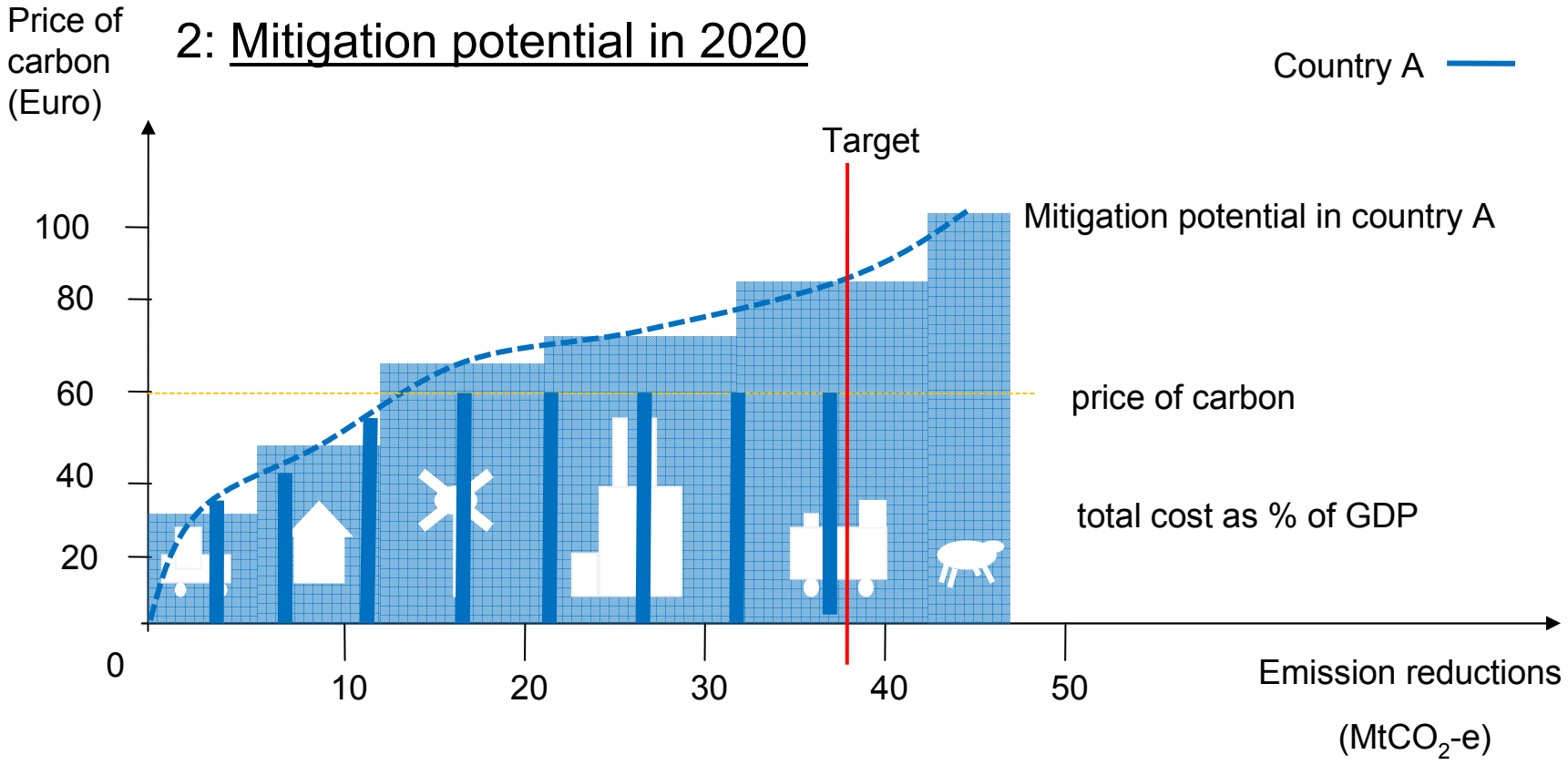
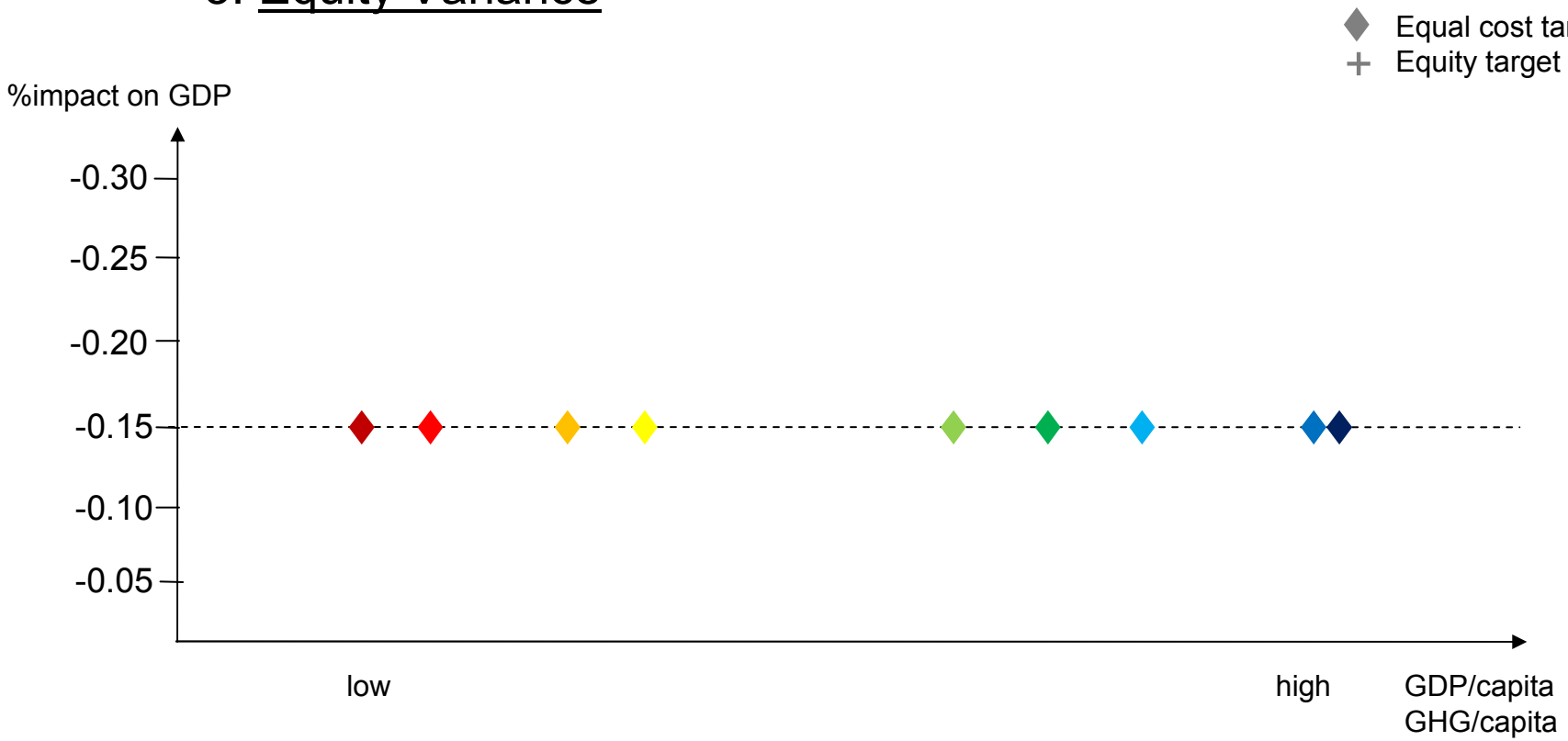


Assessing Comparable Effort (ACE) Framework

3: Equity Variance



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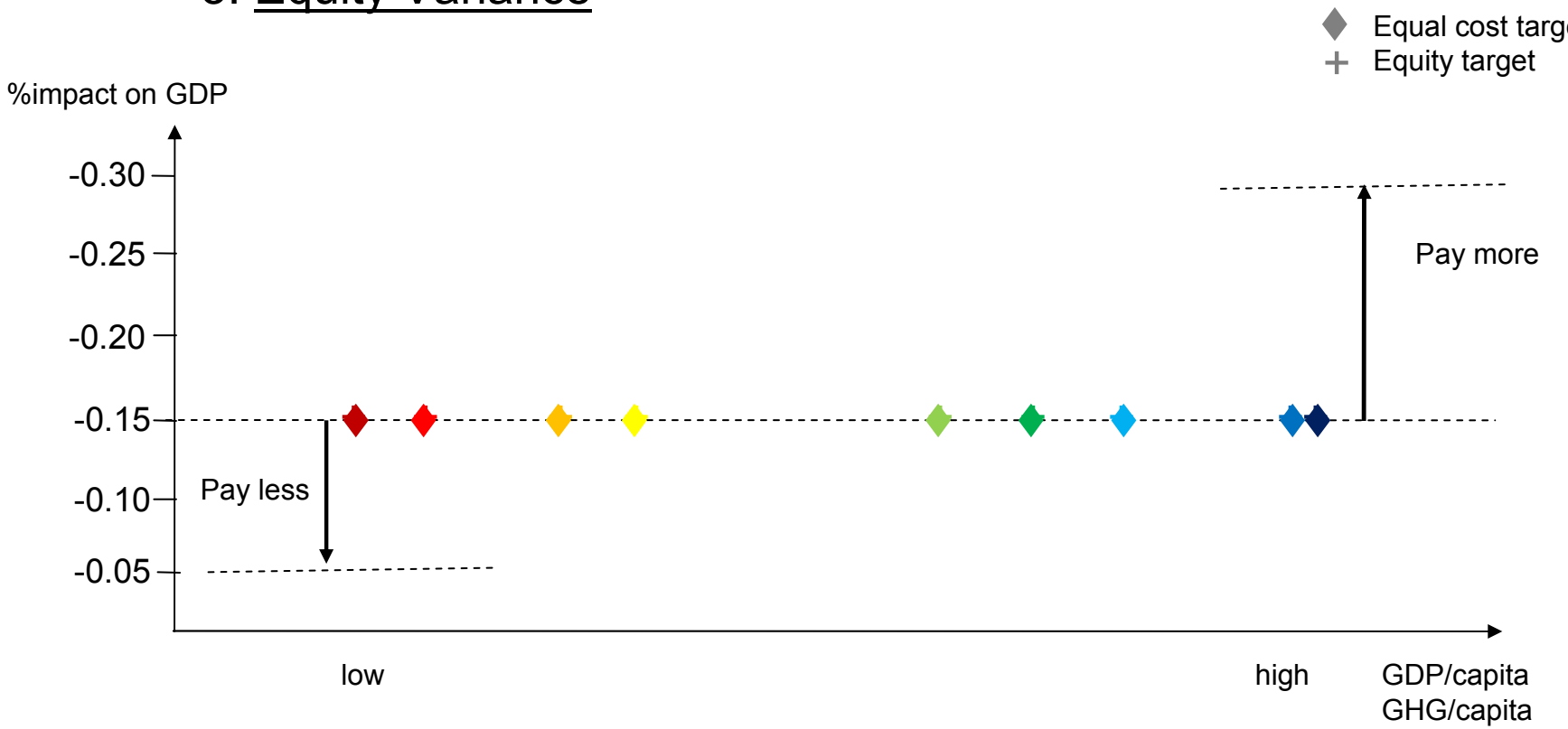
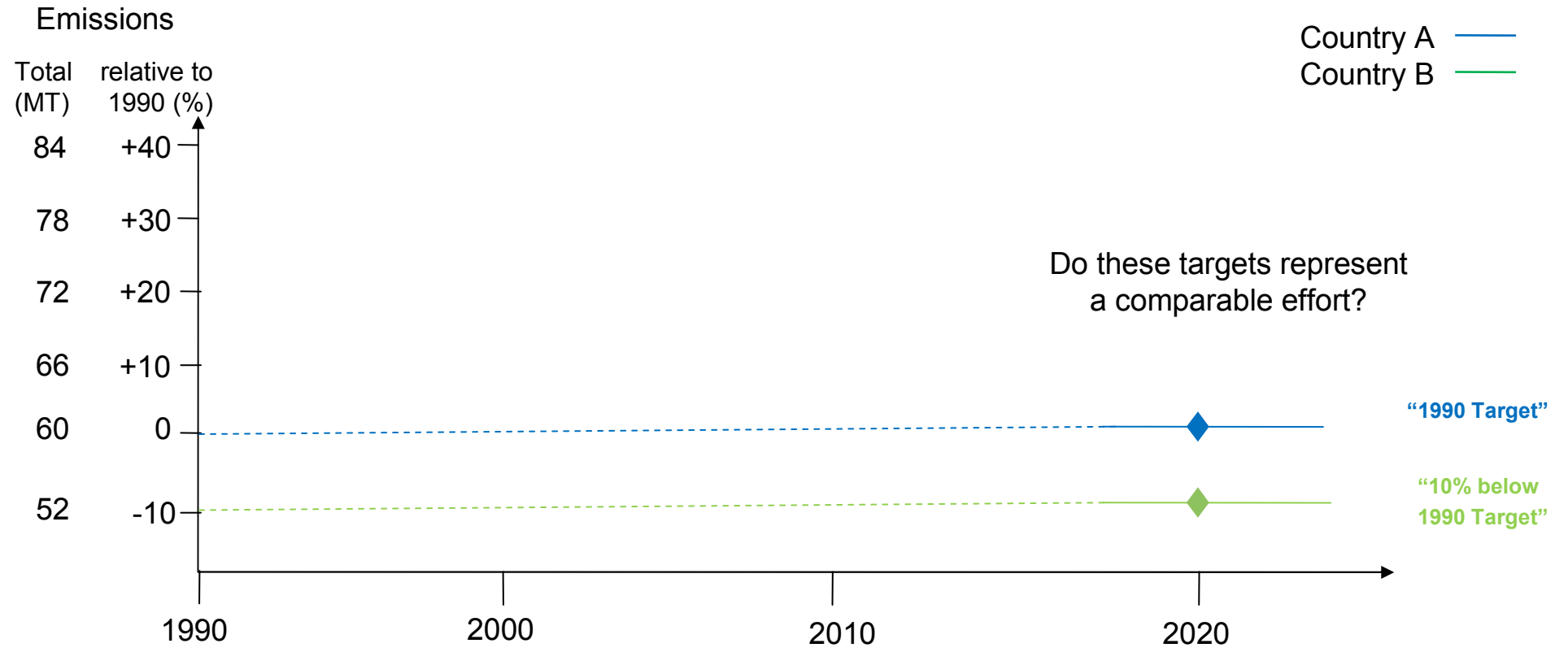


Assessing Comparable Effort (ACE) Framework

Estimating the costs faced by a country

- The cost that a country will face in meeting a target is a function of:
  1. BAU emission projections during the commitment period
     - Population/GDP growth
     - Emission intensity
  2. Cost of reducing emissions below BAU
     - Structure of the economy – domestic emission profile and sectoral mitigation potential – "domestic MAC"

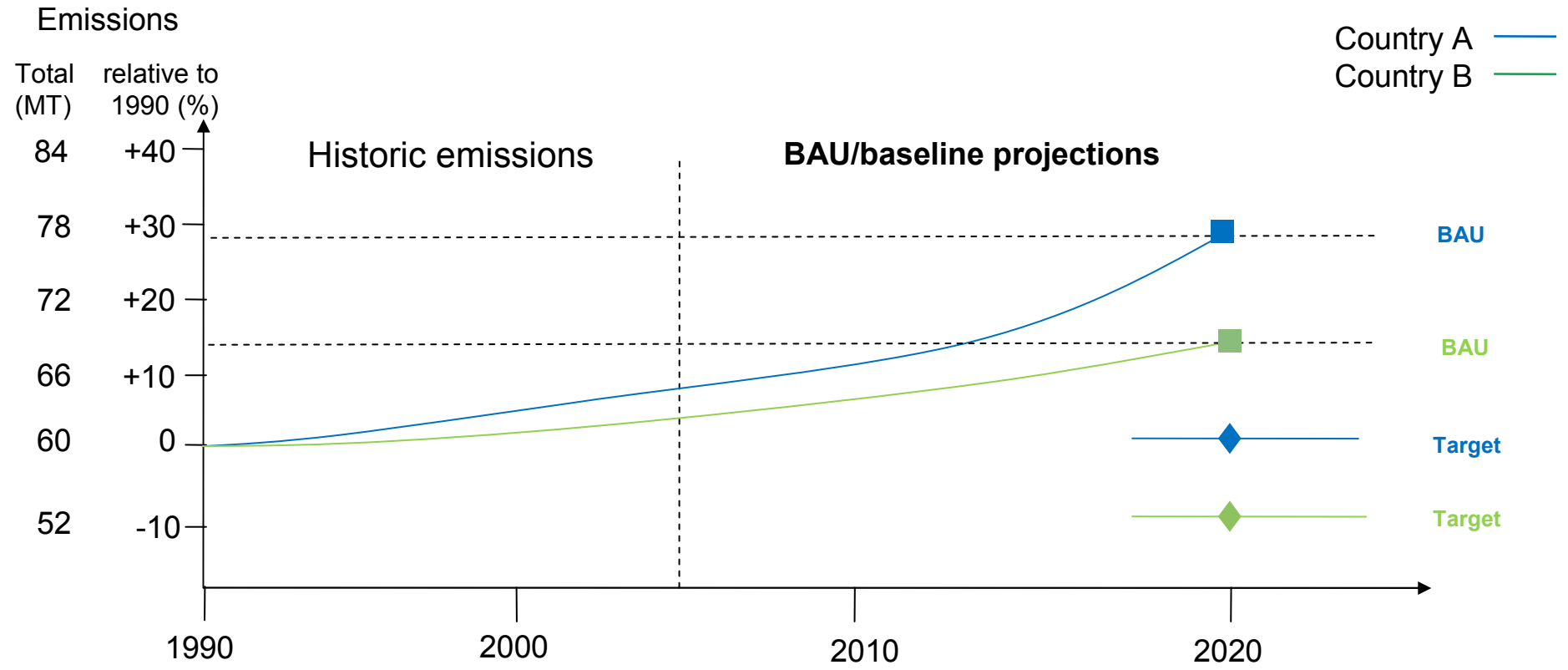

Assessing Comparable Effort (ACE) Framework



Assessing Comparable Effort (ACE) Framework

1. W*here are the countries BAU emissions in 2020?*

Assessing Comparable Effort (ACE) Framework



Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

Country A	+30 % of 1990	Country B	+15% of 1990


Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*


Assessing Comparable Effort (ACE) Framework

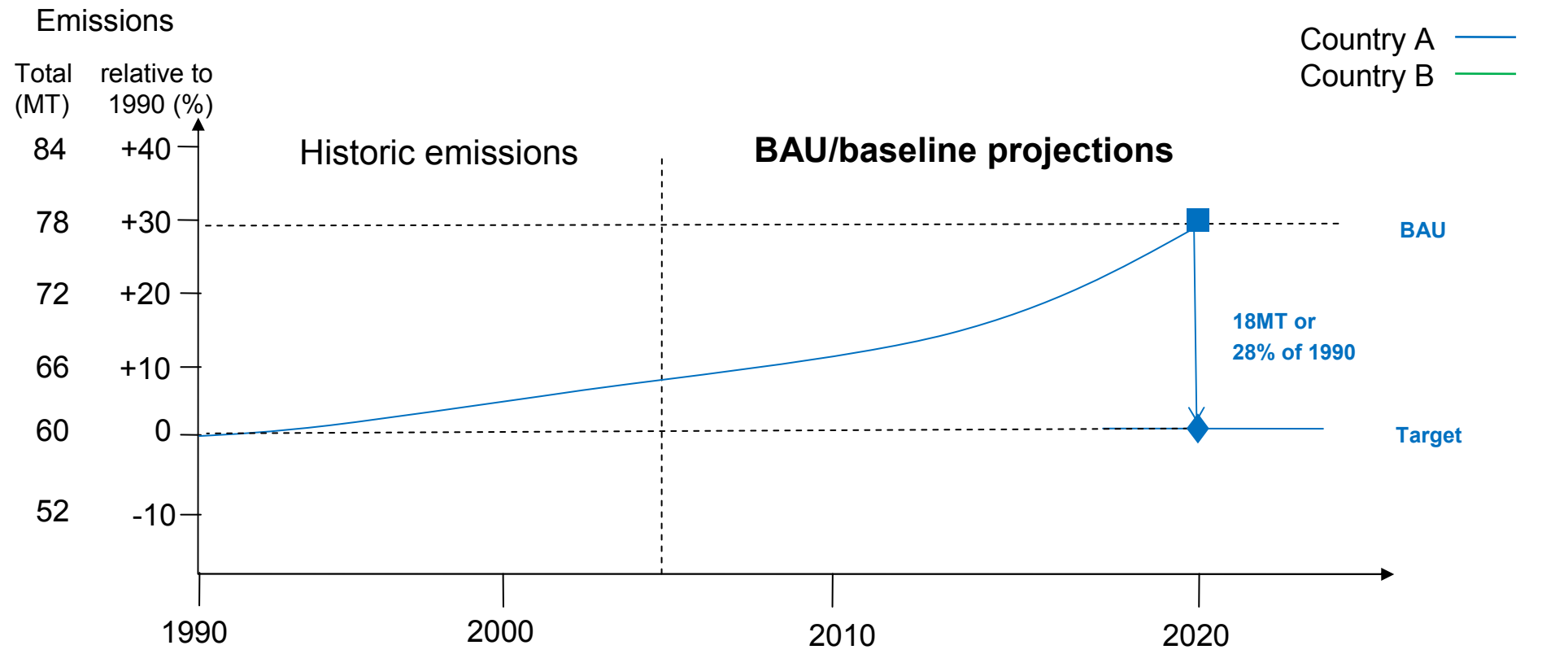
1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*

   a) How many reductions are required?


Assessing Comparable Effort (ACE) Framework



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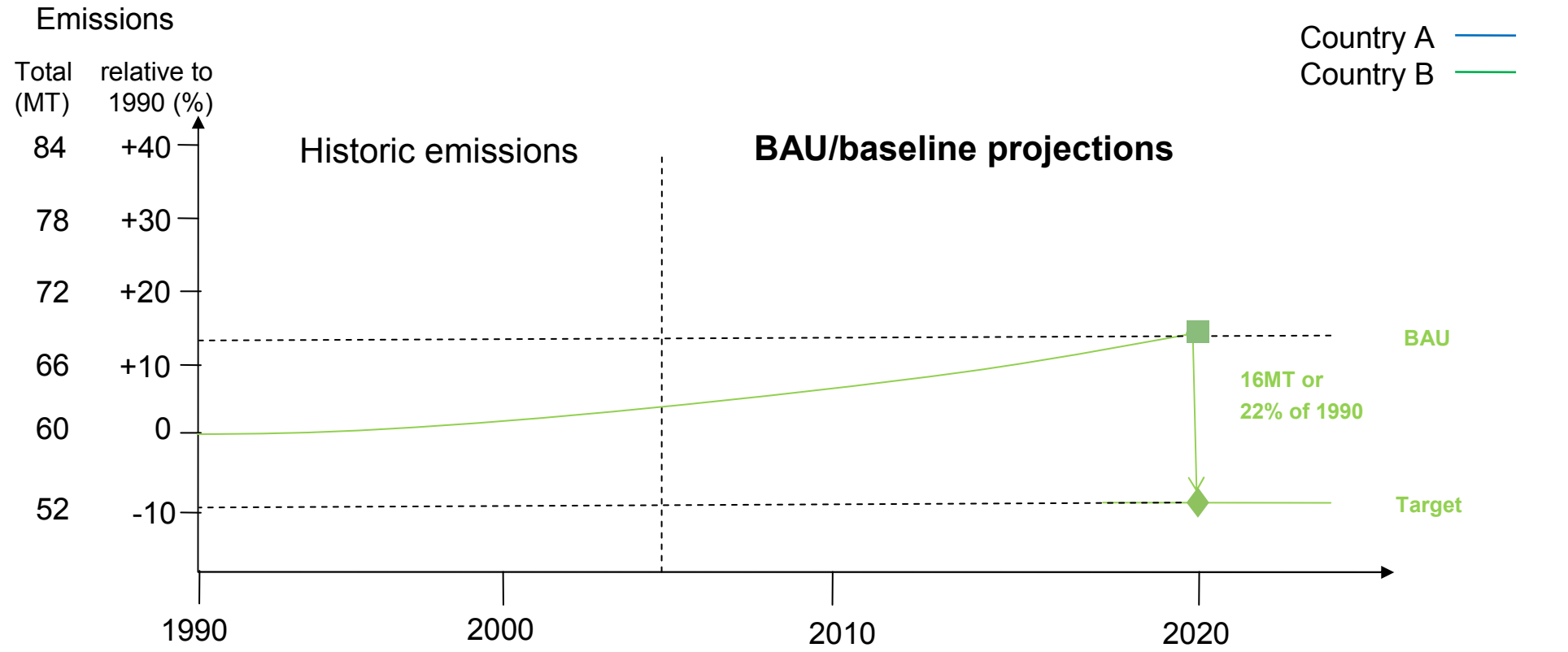

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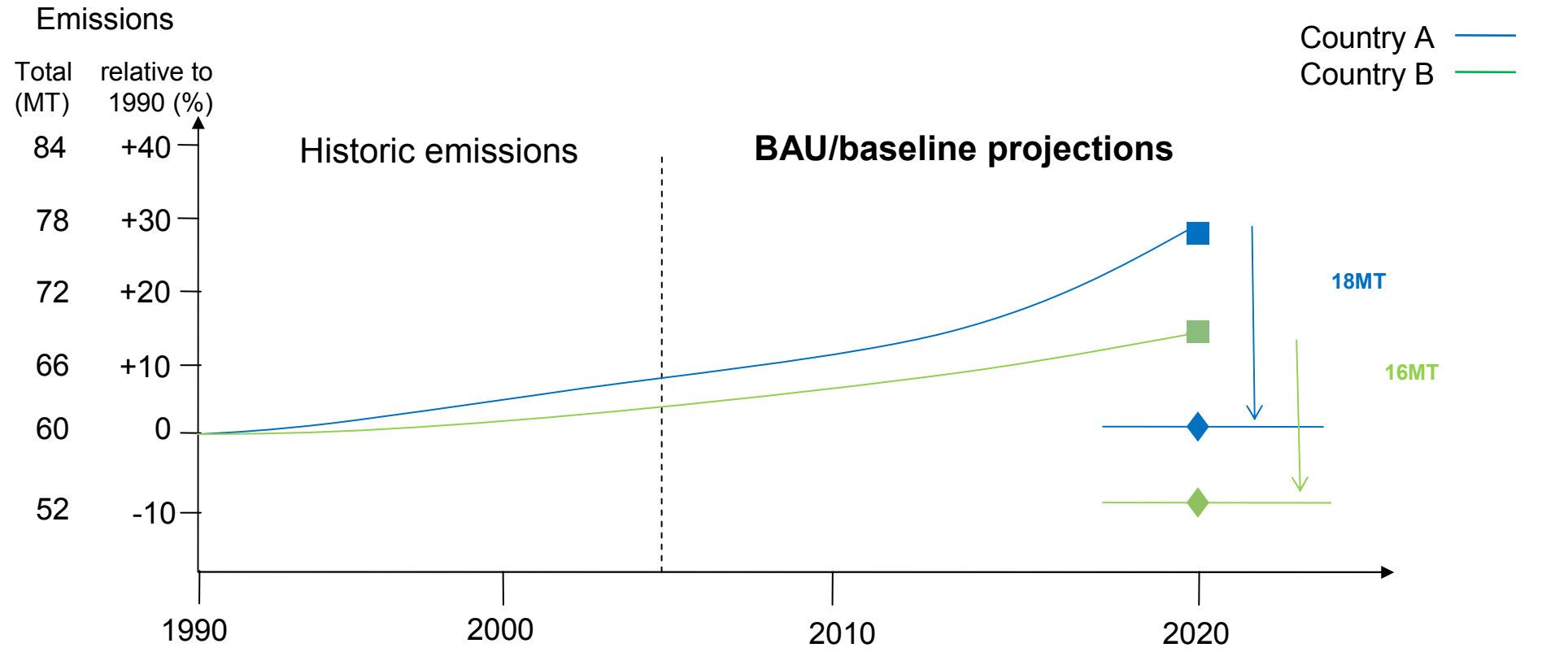

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1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*

   a) How many reductions are required?

   Country A 18MT Country B 16MT


Assessing Comparable Effort (ACE) Framework

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   Country A +30 % of 1990 Country B +15% of 1990

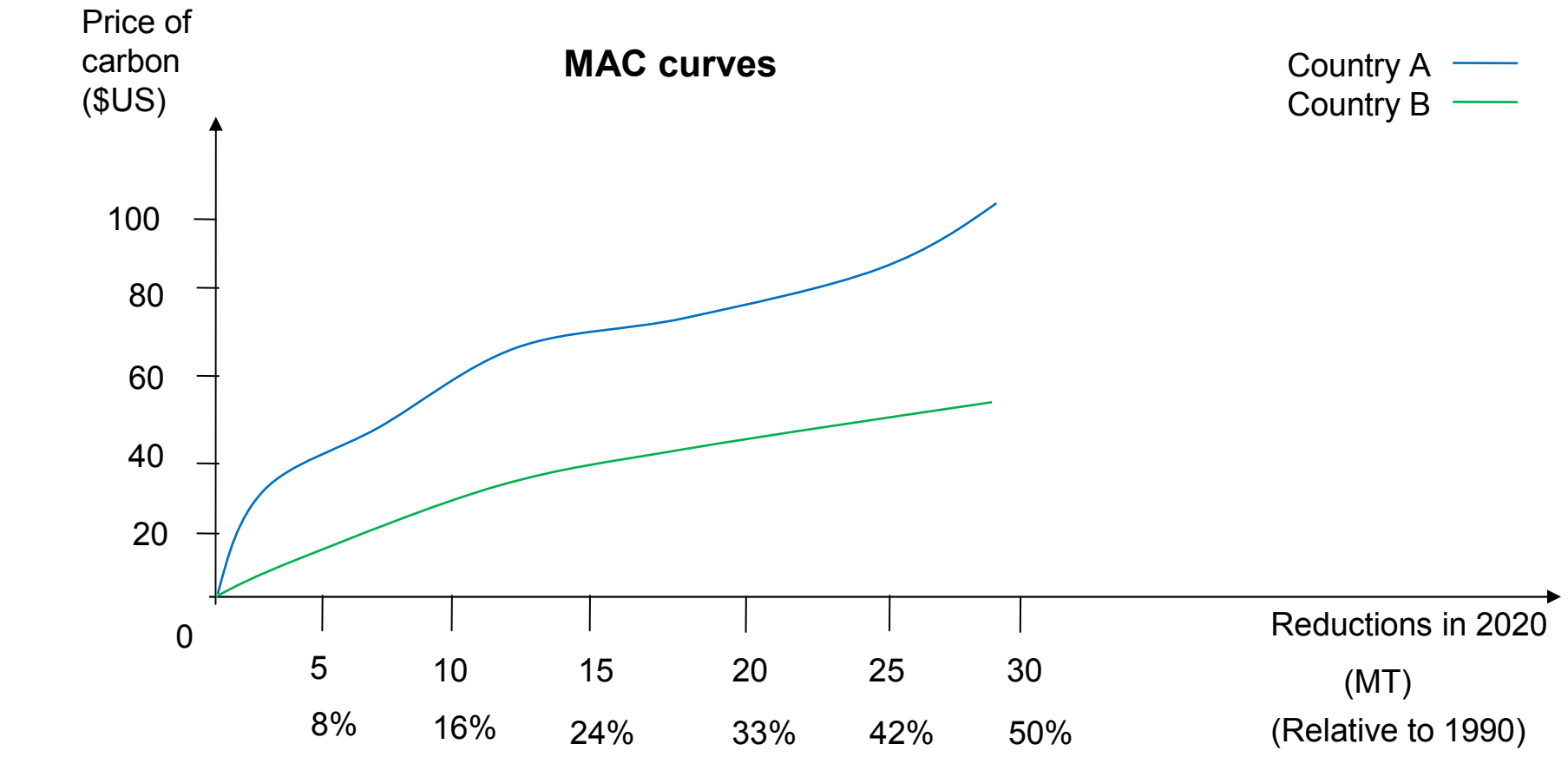
2. *What are the costs of meeting the target?*

   a) How many reductions are required?

   Country A 18MT Country B 16MT

   b) How much does it cost to reduce these emissions?


Assessing Comparable Effort (ACE) Framework



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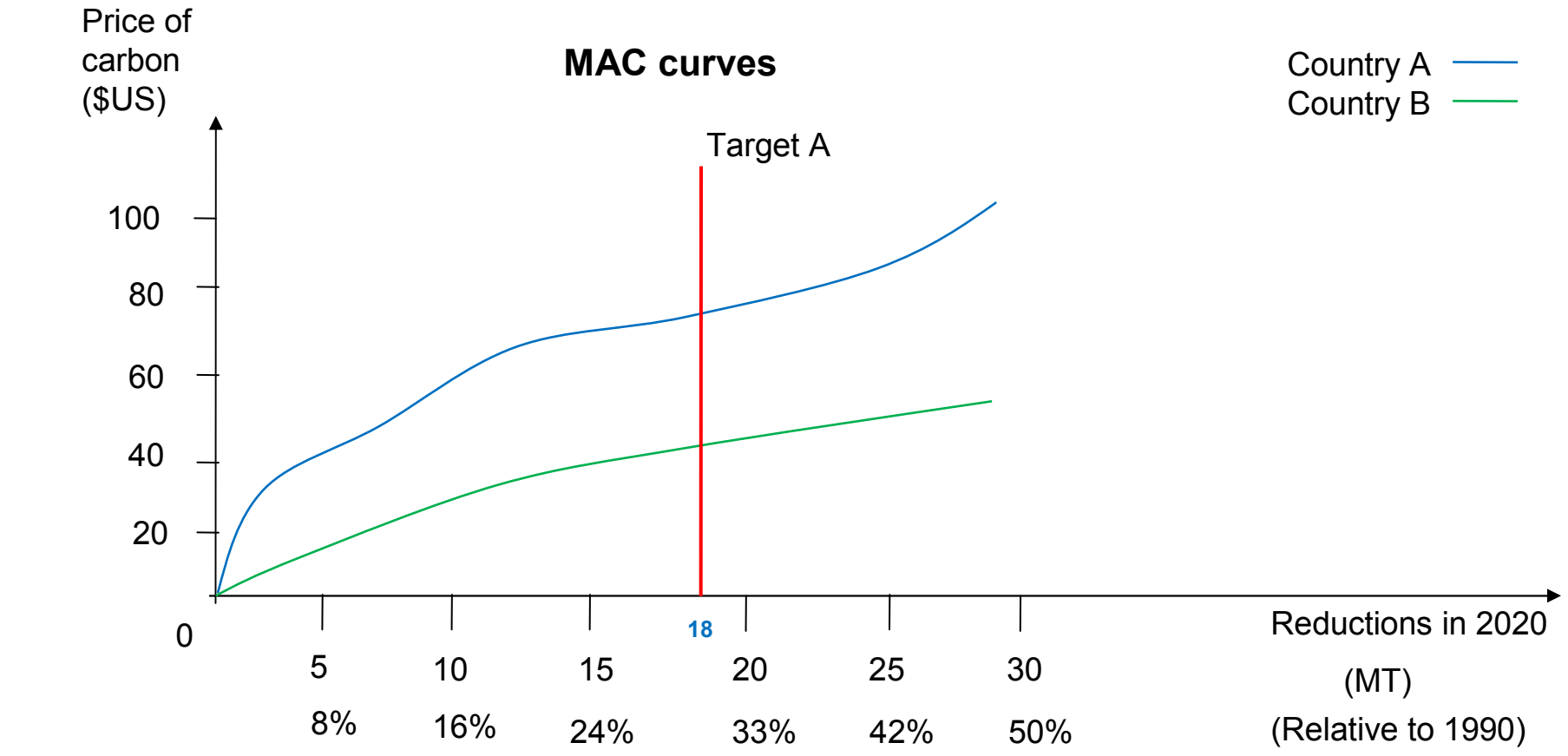


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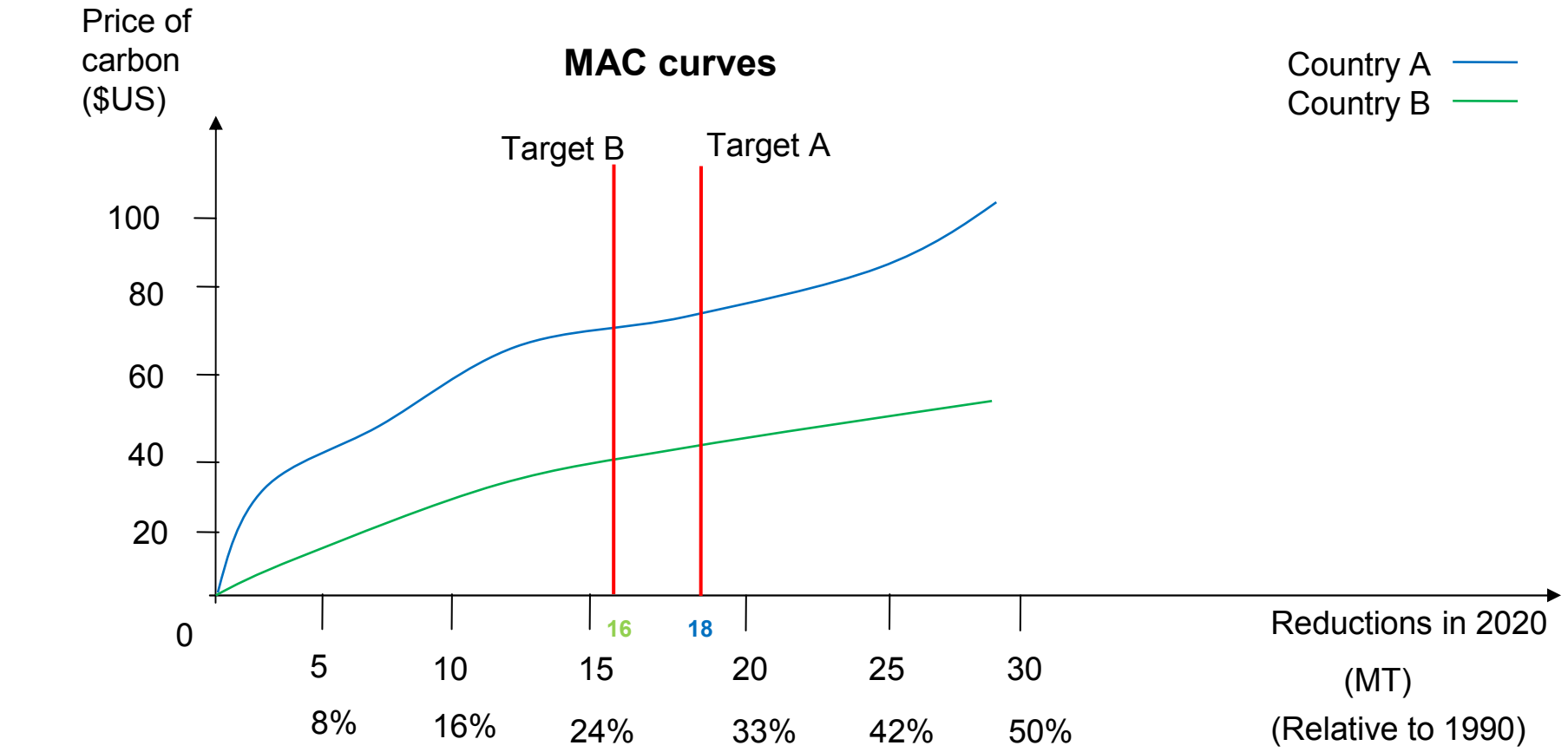

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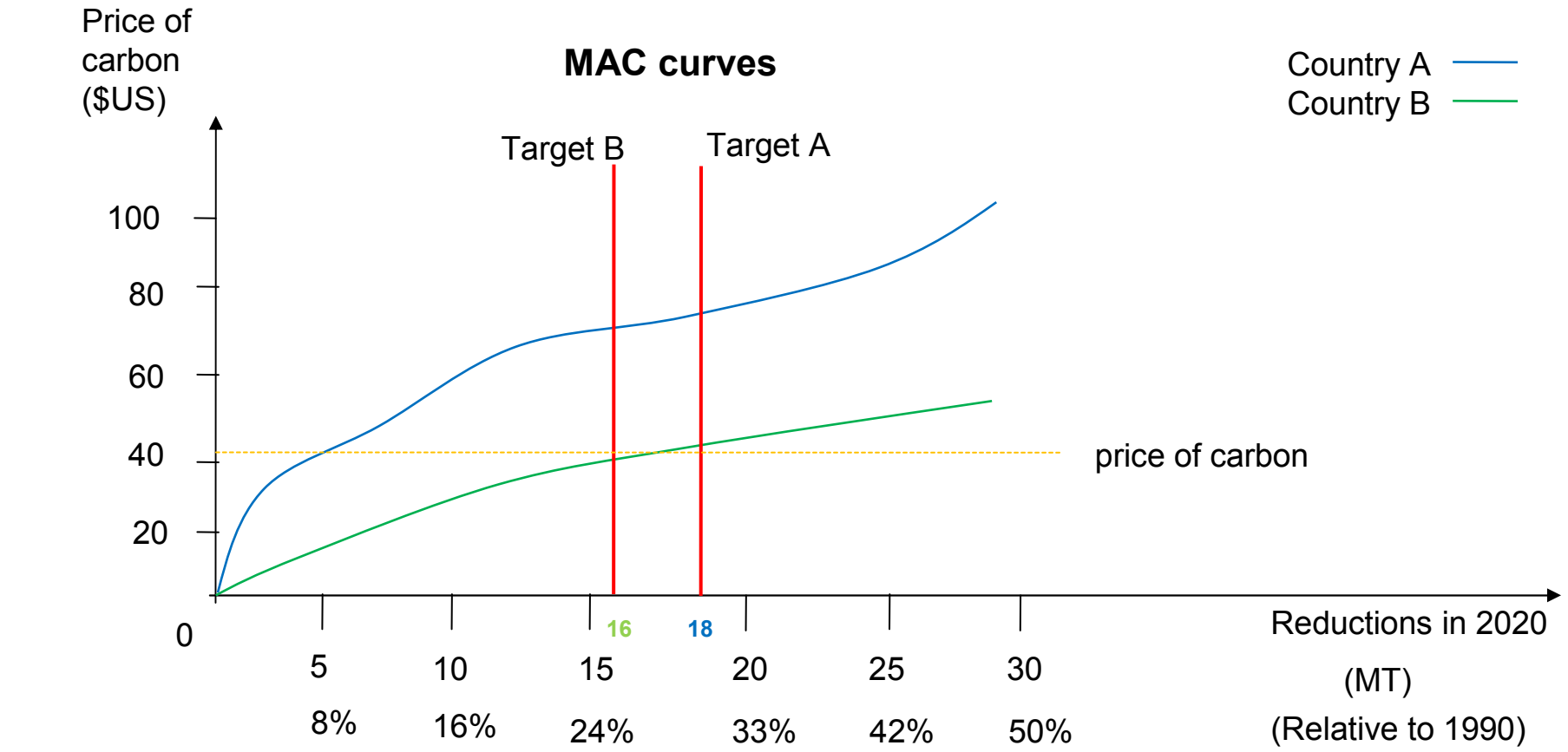

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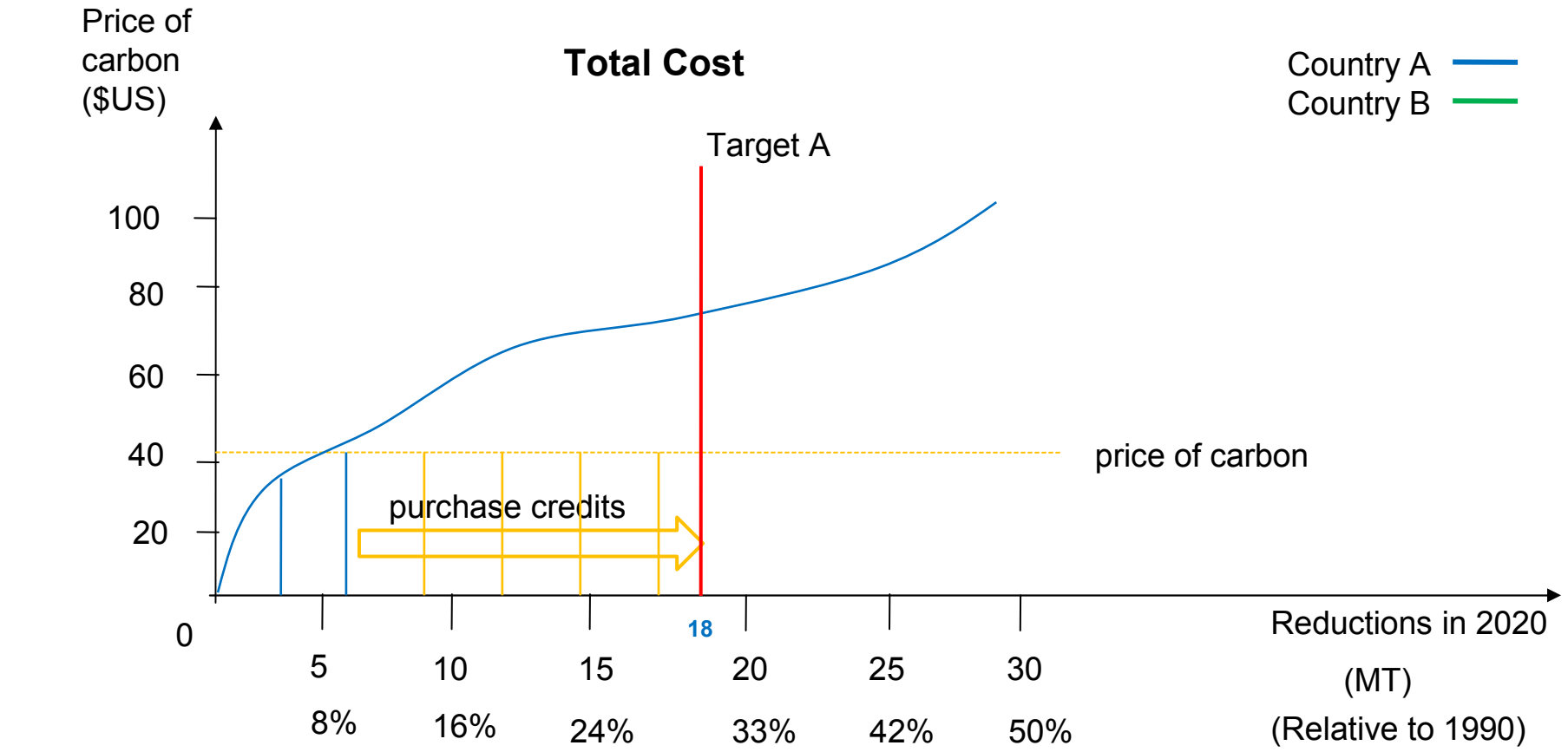

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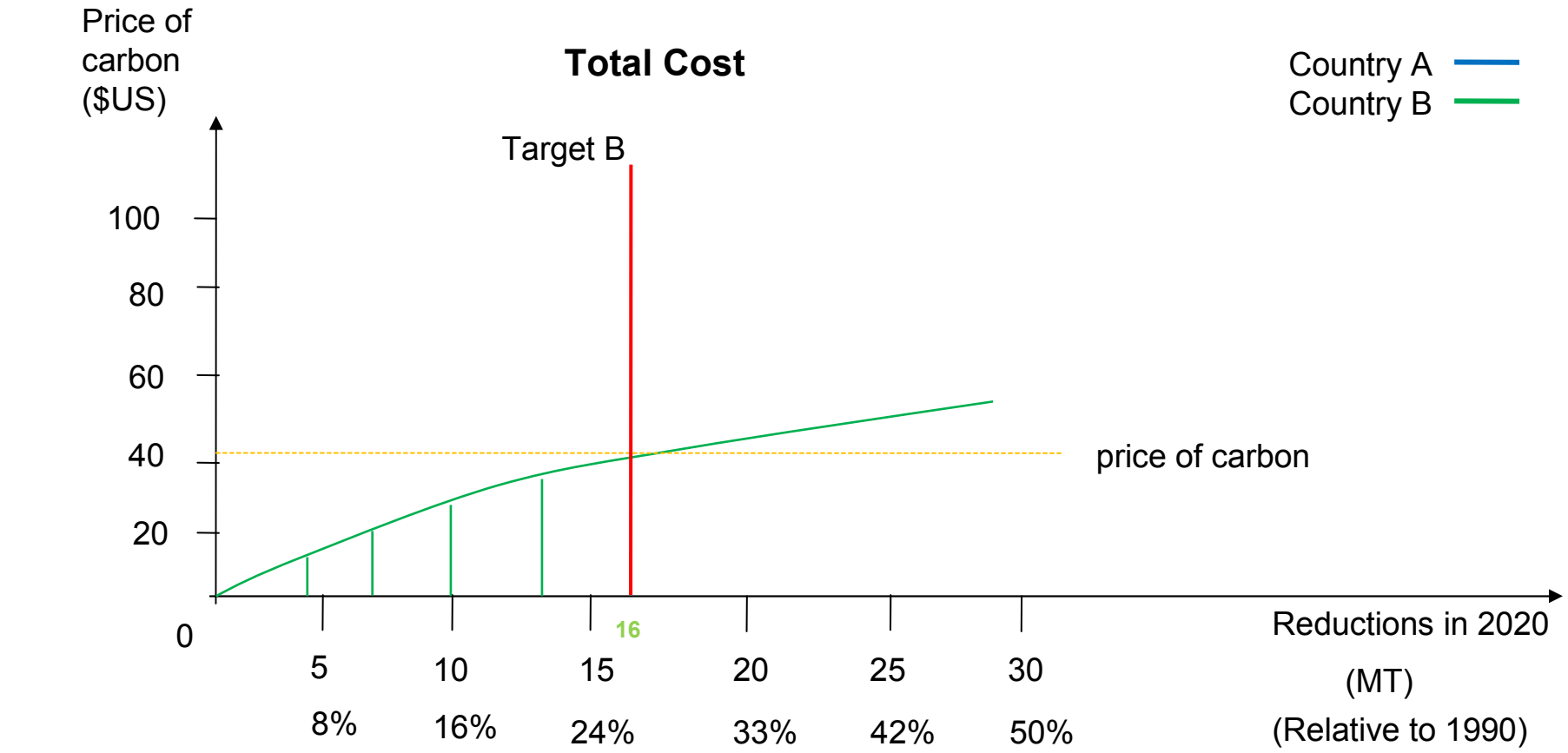

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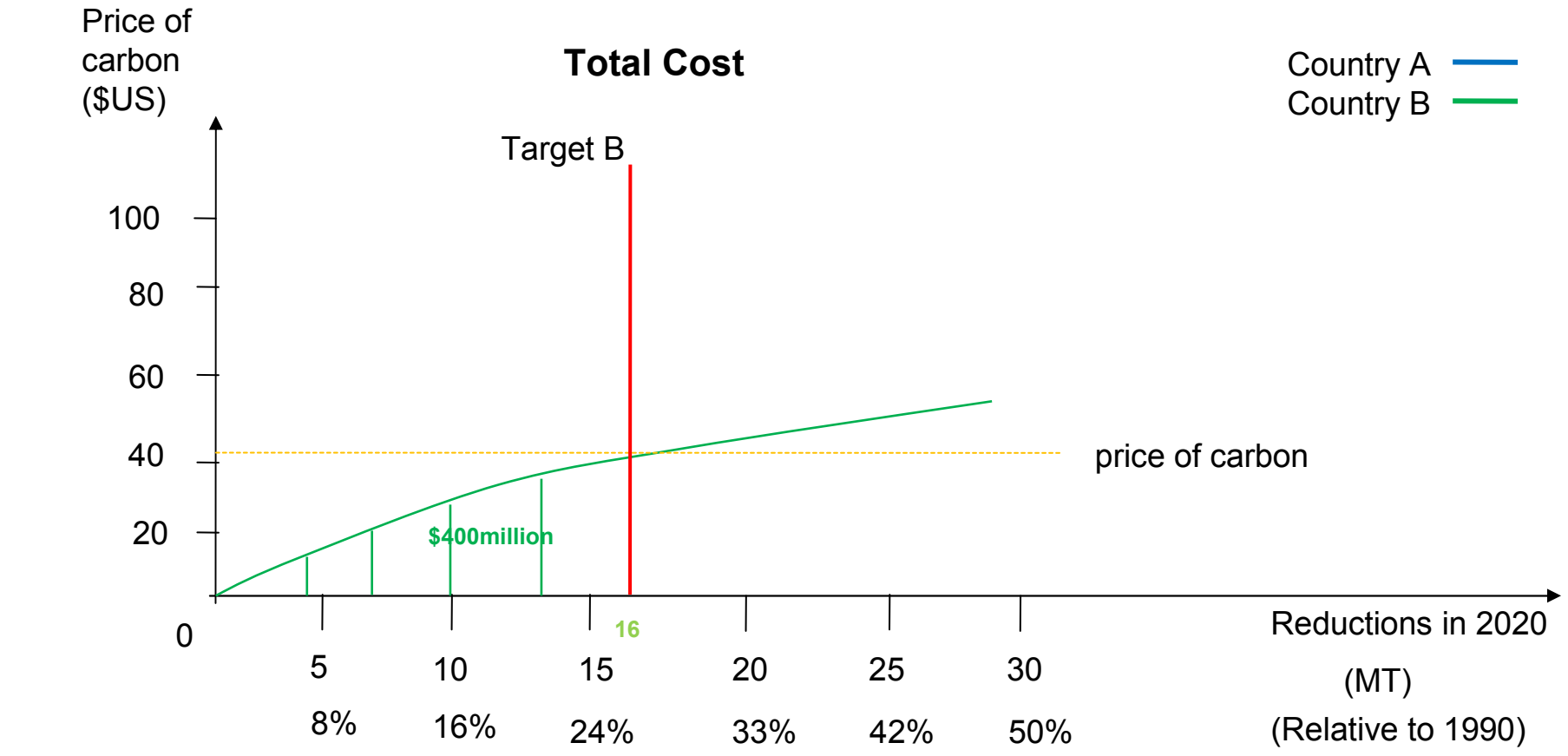

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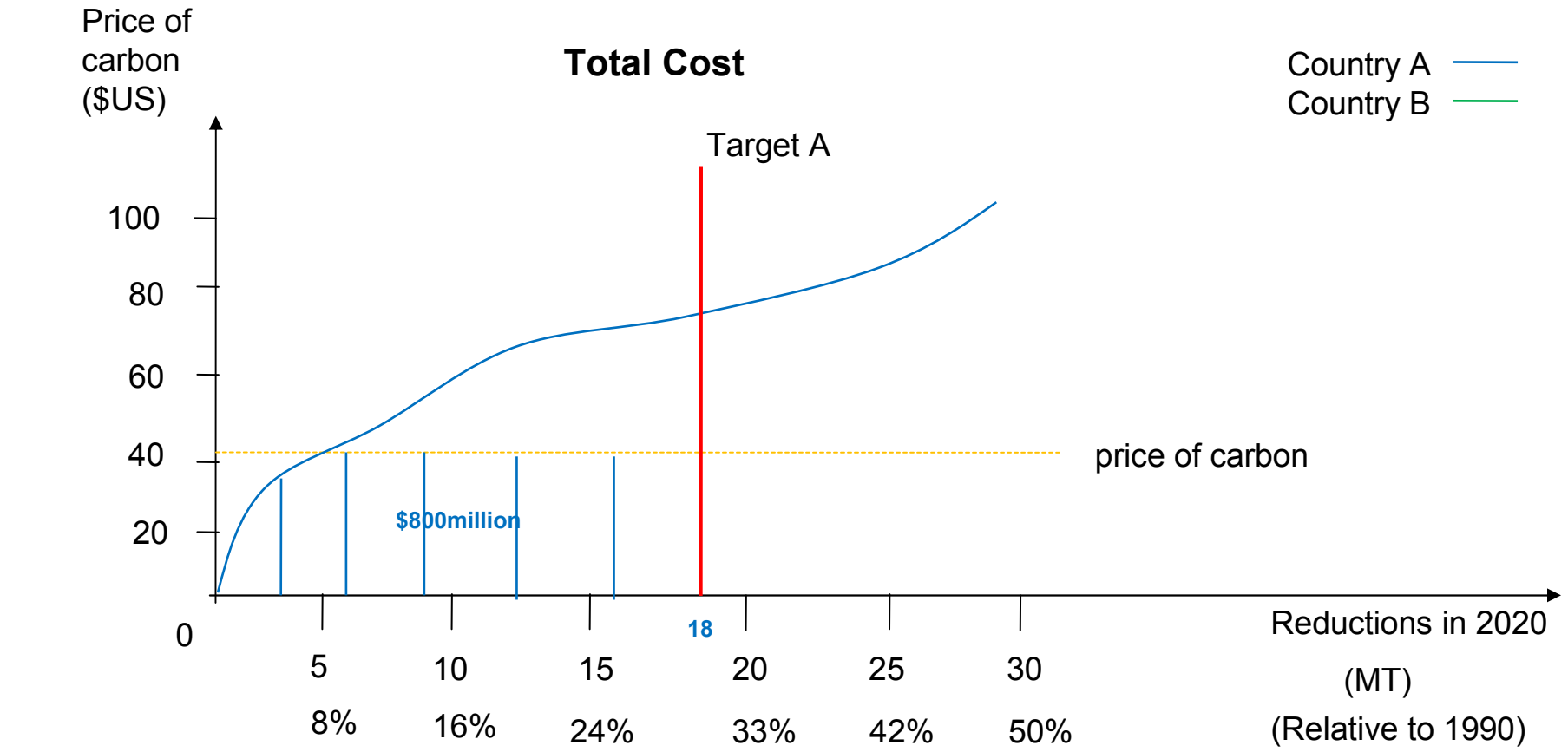

Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*

   a) How many reductions are required?

   Country A 18MT Country B 16MT

   b) How much does it cost to reduce these emissions?

   Country A $800m Country B $400m


Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

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   b) How much does it cost to reduce these emissions?

   Country A GDP $500b $800m Country B GDP $500b $400m


Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*

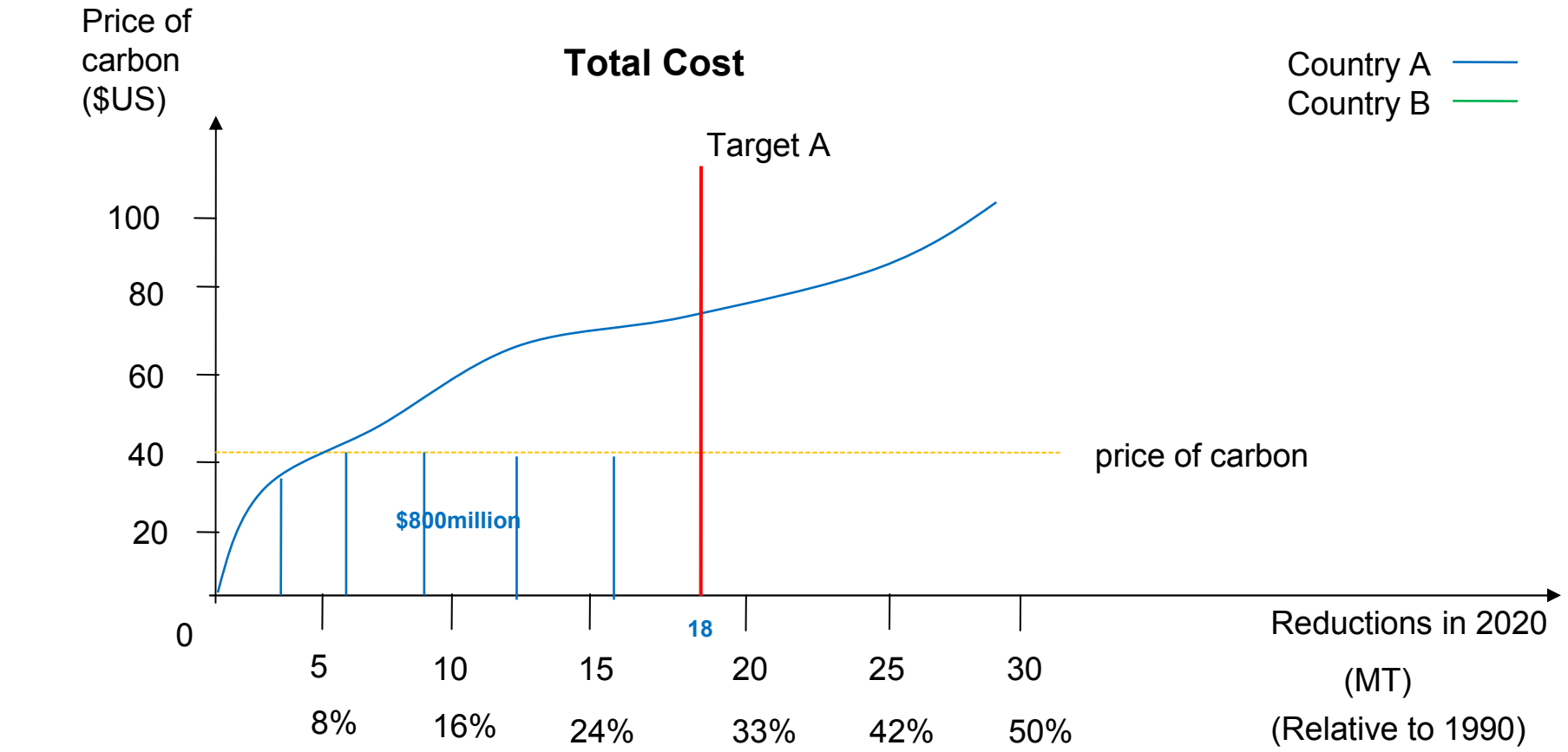
   a) How many reductions are required?

   Country A 18MT Country B 16MT

   b) How much does it cost to reduce these emissions?

Country A	$800m	Country B	$400m
GDP $500b	0.16% of GDP	GDP $500b	0.08% of GDP


Assessing Comparable Effort (ACE) Framework



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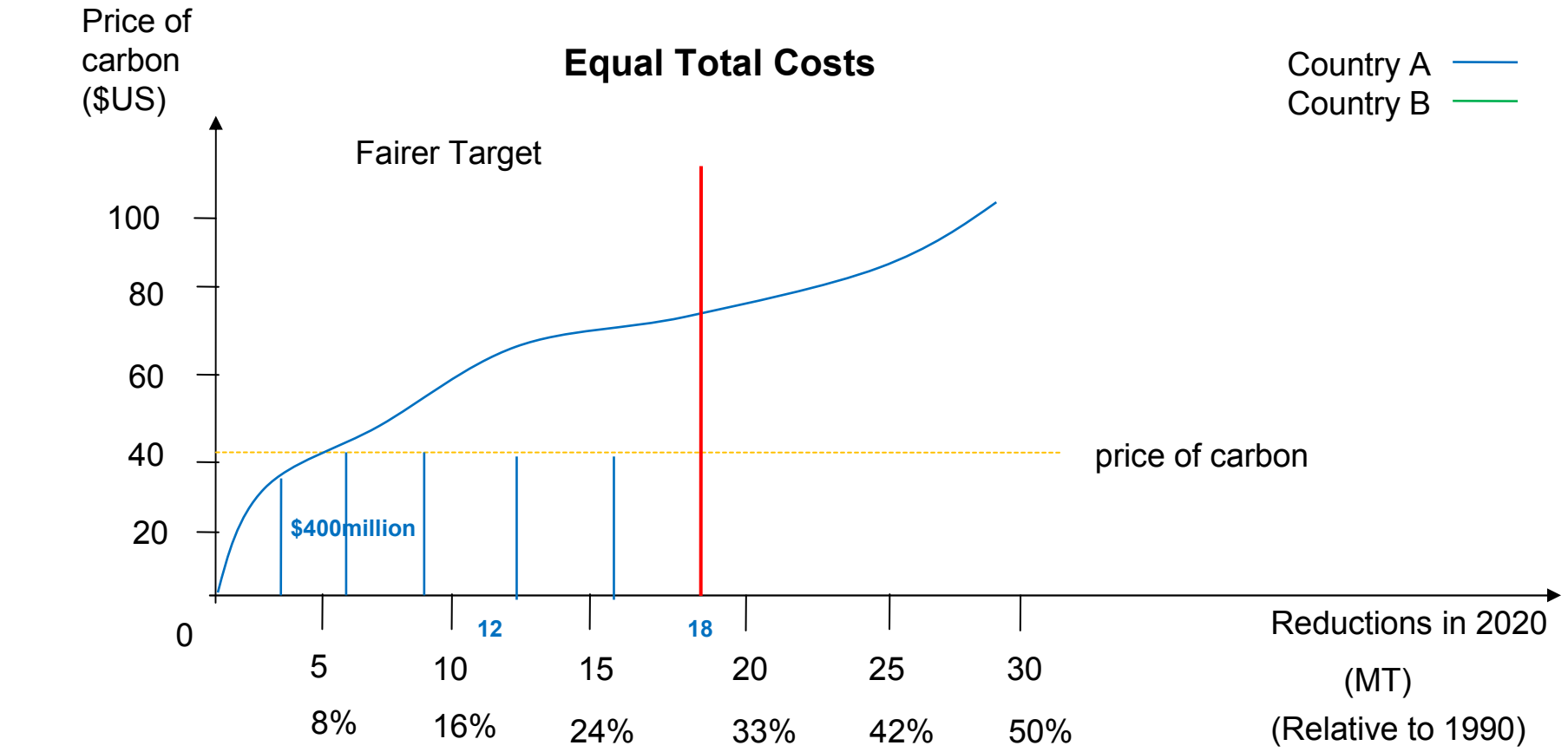


Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*

   a) How many reductions are required?

   Country A ? MT Country B 16MT

   b) How much does it cost to reduce these emissions?

   Country A GDP $500b: $400m 0.08% of GDP

   Country B GDP $500b: $400m 0.08% of GDP


Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*

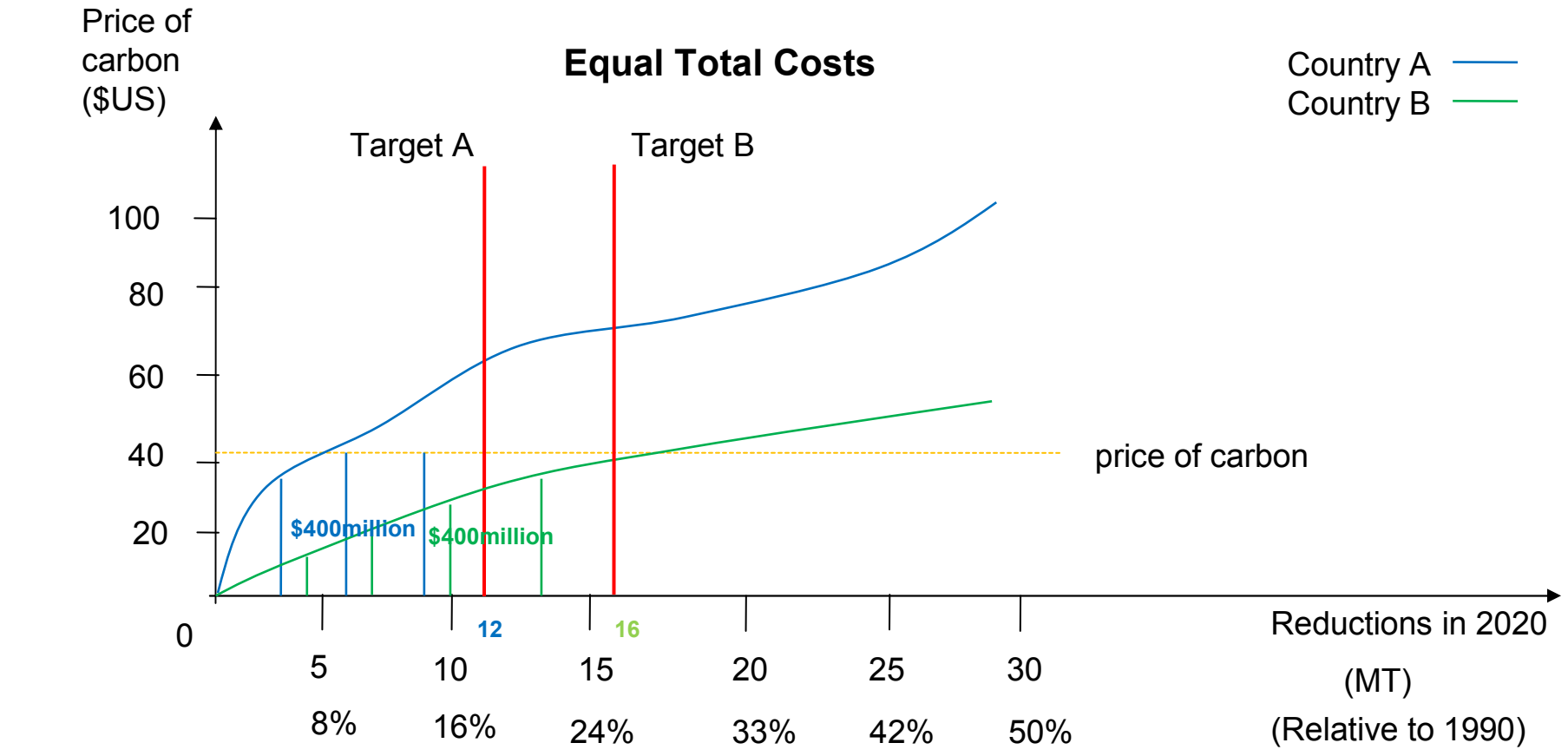
   a) How many reductions are required?

   Country A **12MT** Country B 16MT

   b) How much does it cost to reduce these emissions?

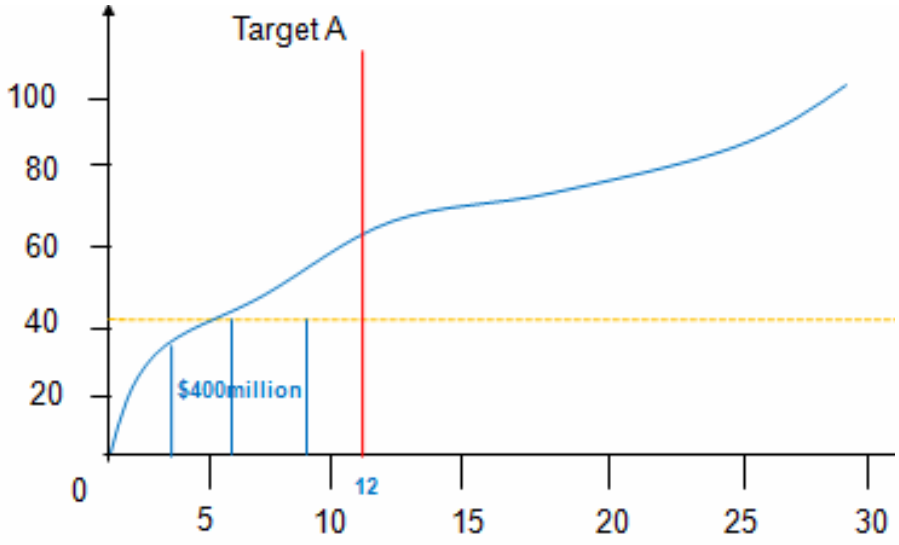
   Country A GDP $500b **$400m 0.08% of GDP** Country B GDP $500b $400m 0.08% of GDP

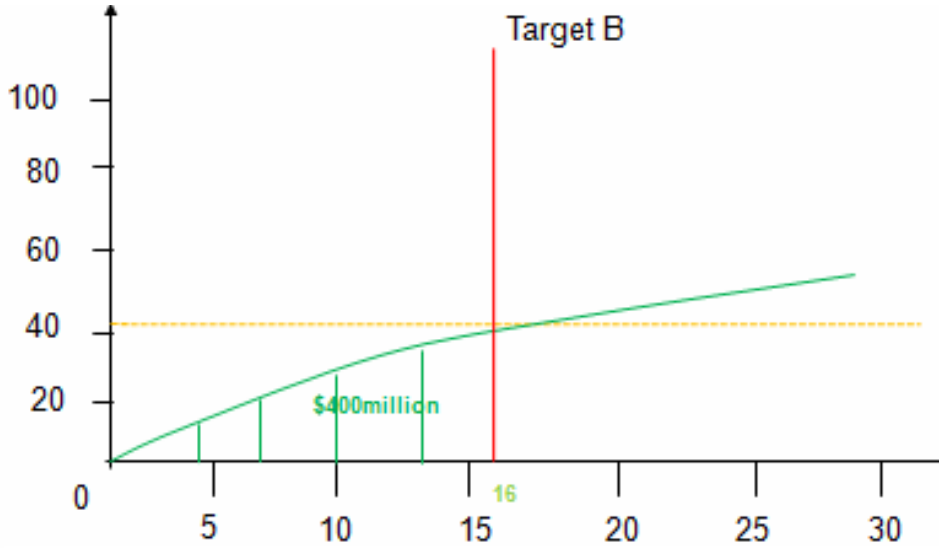

Assessing Comparable Effort (ACE) Framework



Assessing Comparable Effort (ACE) Framework

Equal areas = Equal total costs





Assessing Comparable Effort (ACE) Framework

1. *Where are the countries BAU emissions in 2020?*

   Country A +30 % of 1990 Country B +15% of 1990

2. *What are the costs of meeting the target?*

   a) How many reductions are required?

   Country A 12MT Country B 16MT

   b) How much does it cost to reduce these emissions?

   Country A $400m
   GDP $500b 0.08% of GDP

   Country B $400m
   GDP $500b 0.08% of GDP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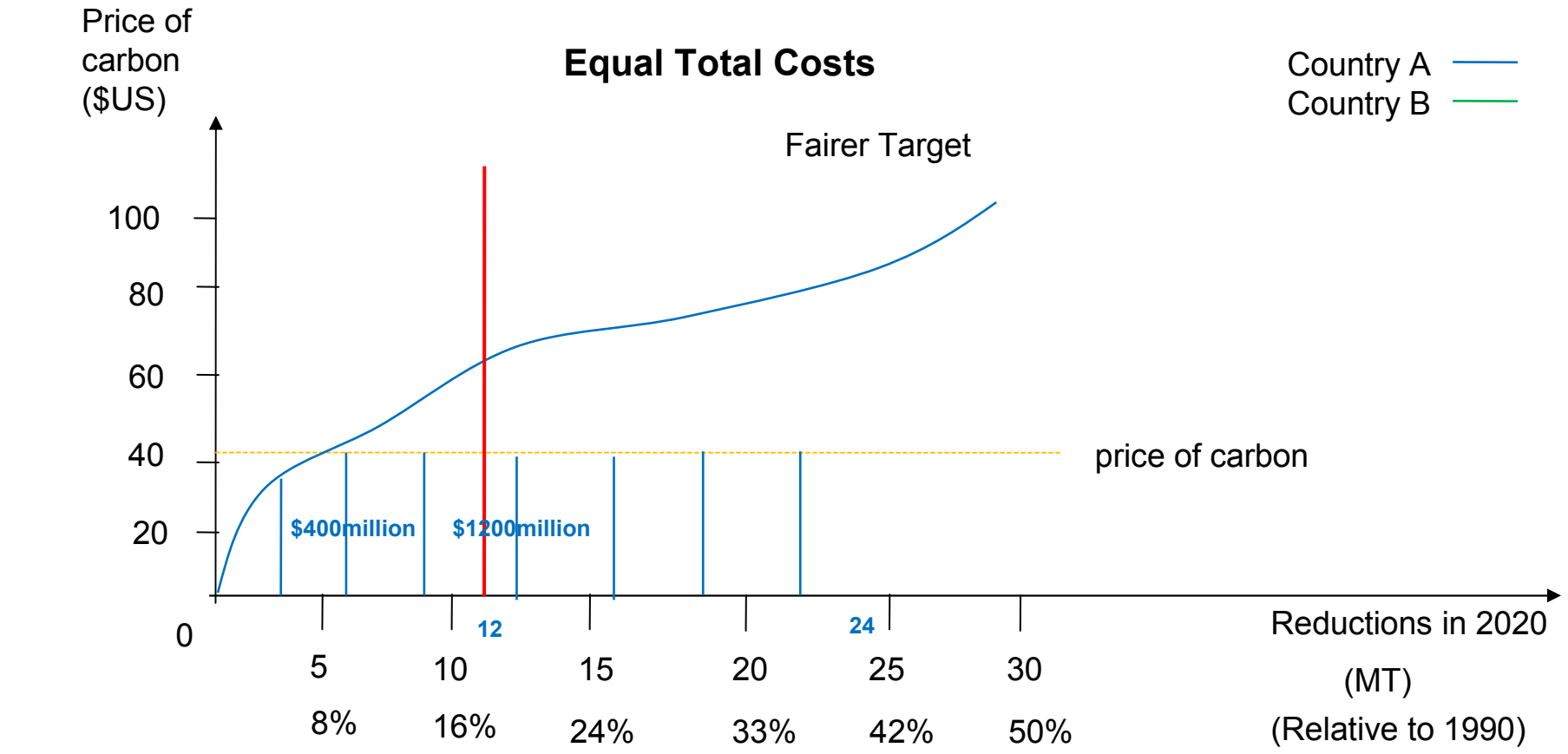
Assessing Comparable Effort (ACE) Framework



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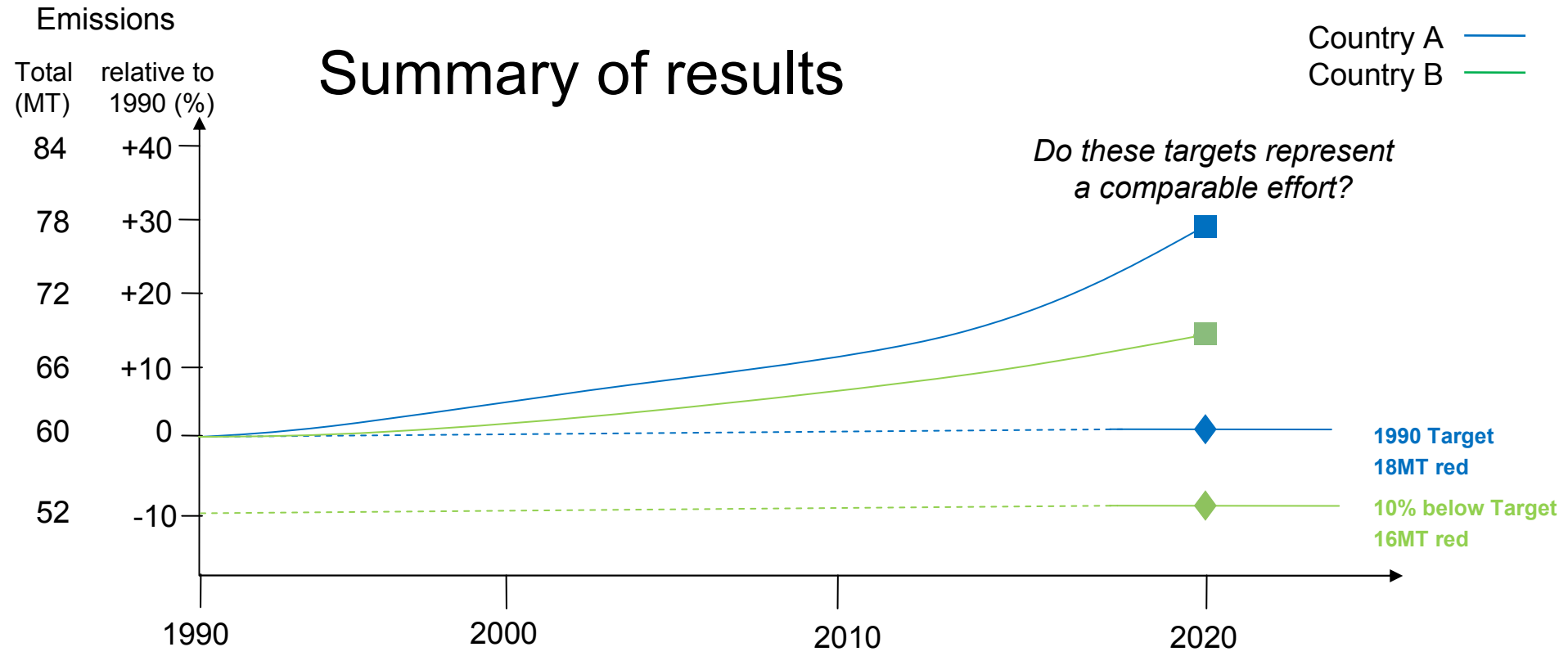
Assessing Comparable Effort (ACE) Framework



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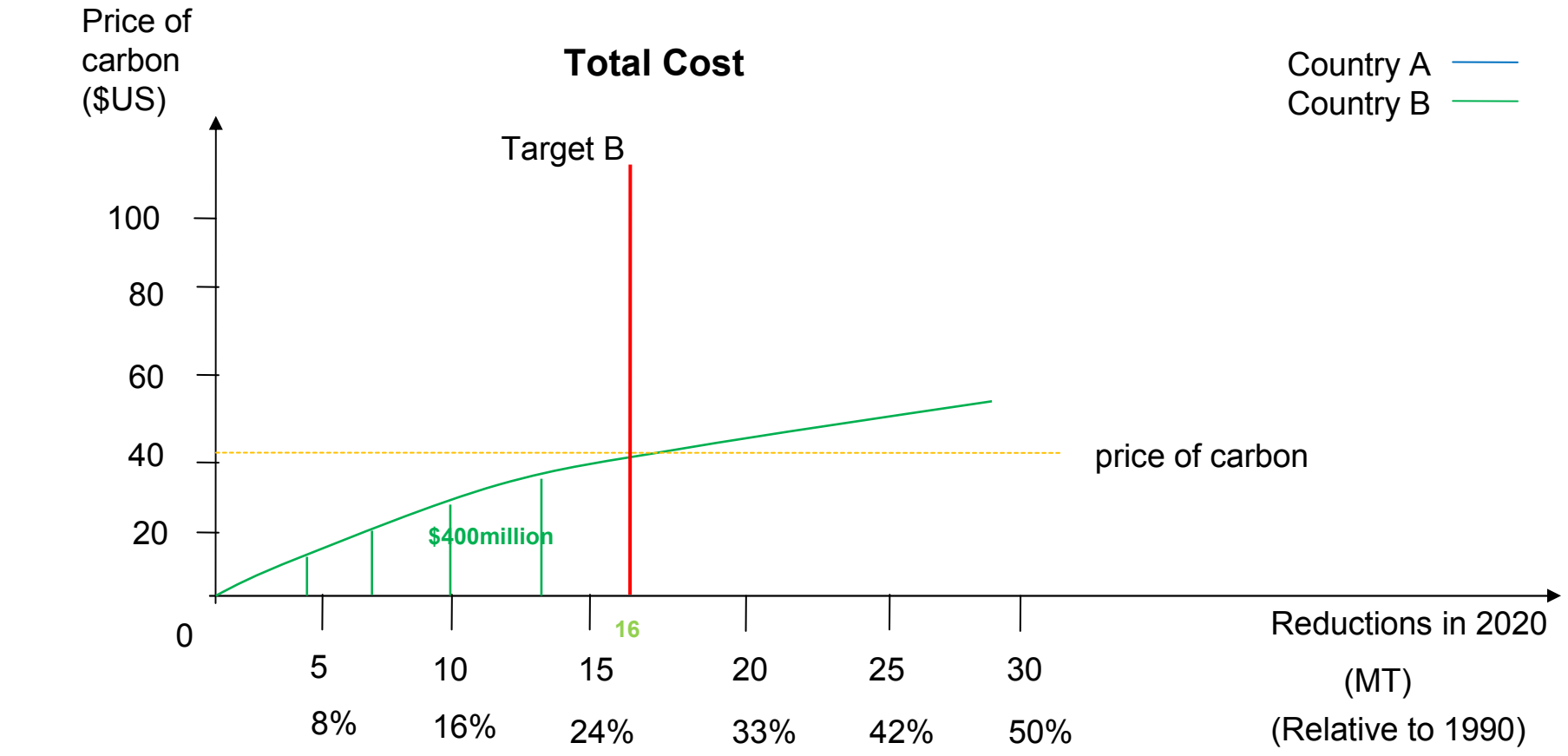

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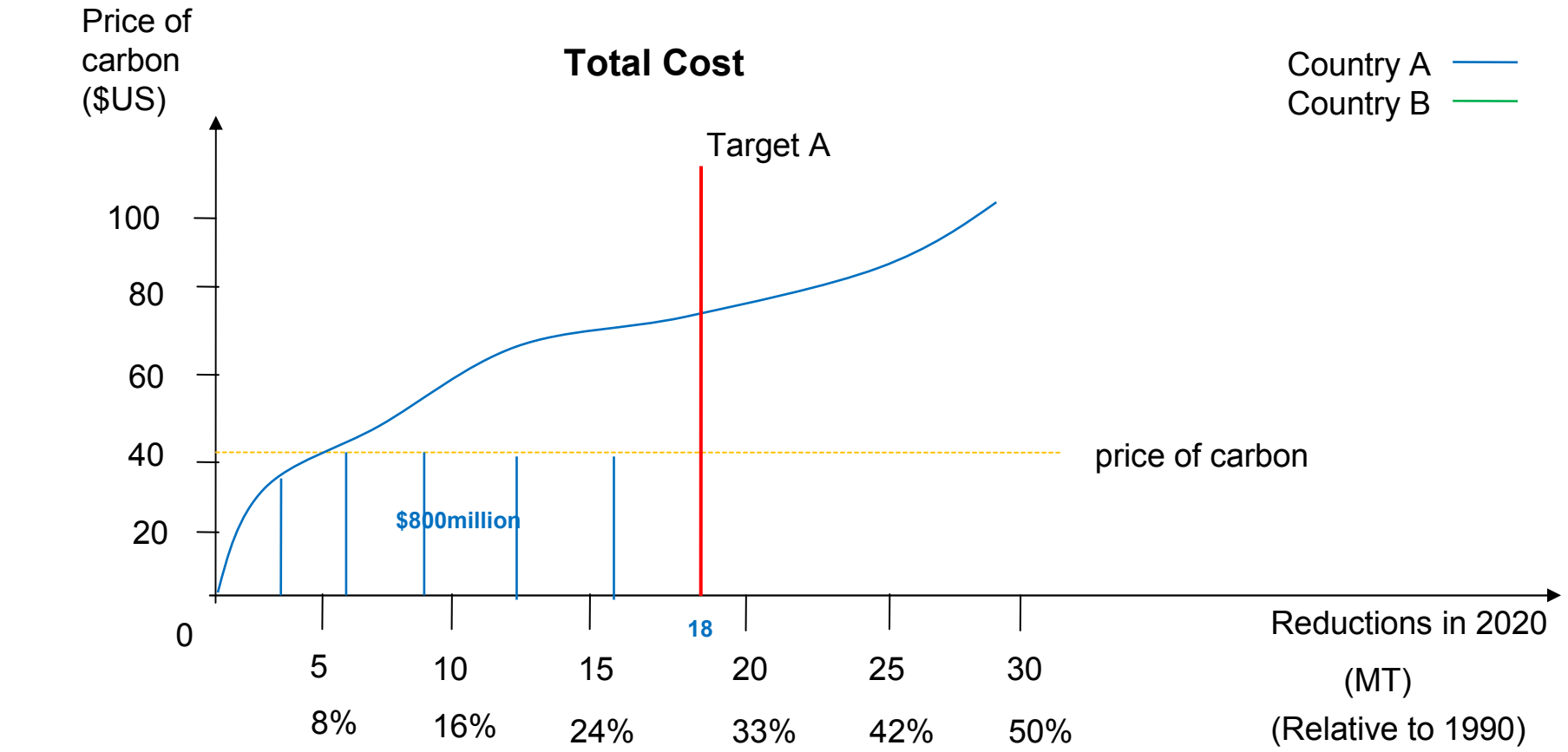

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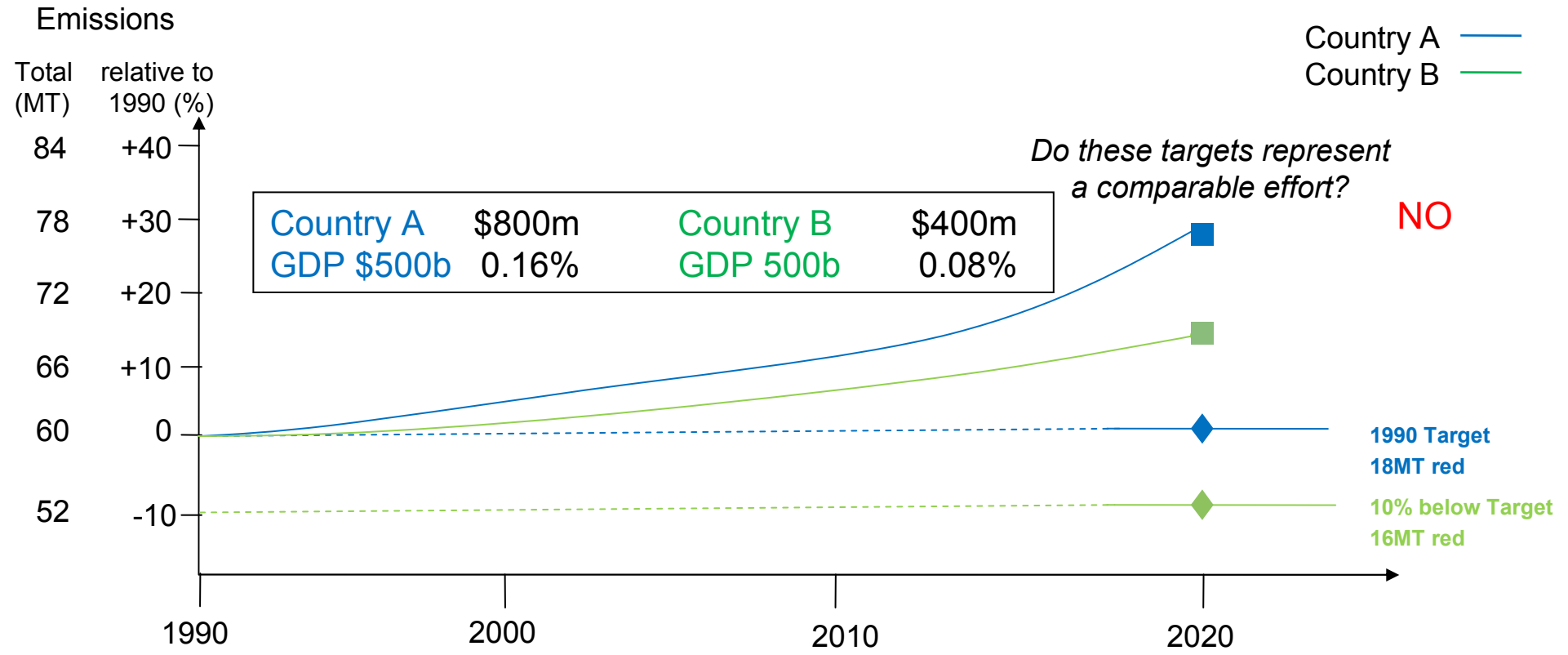

Assessing Comparable Effort (ACE) Framework

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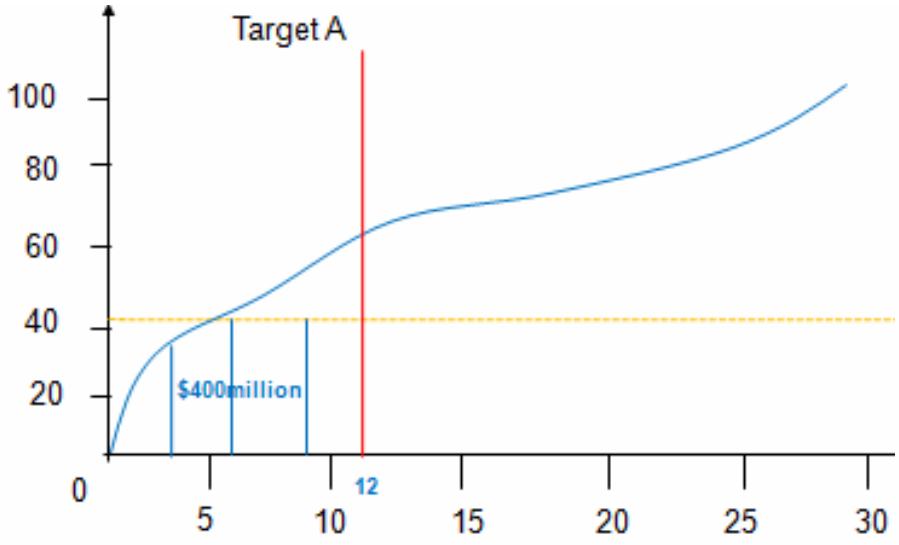

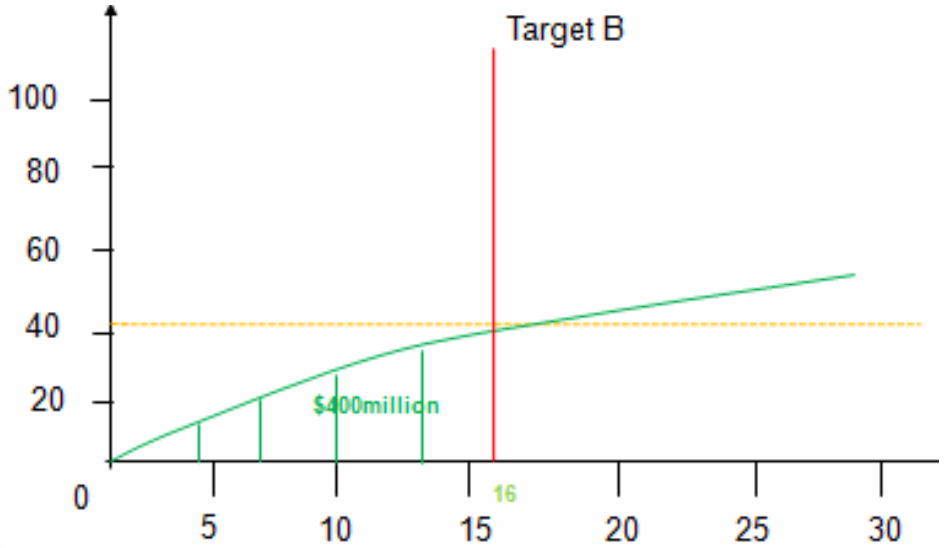

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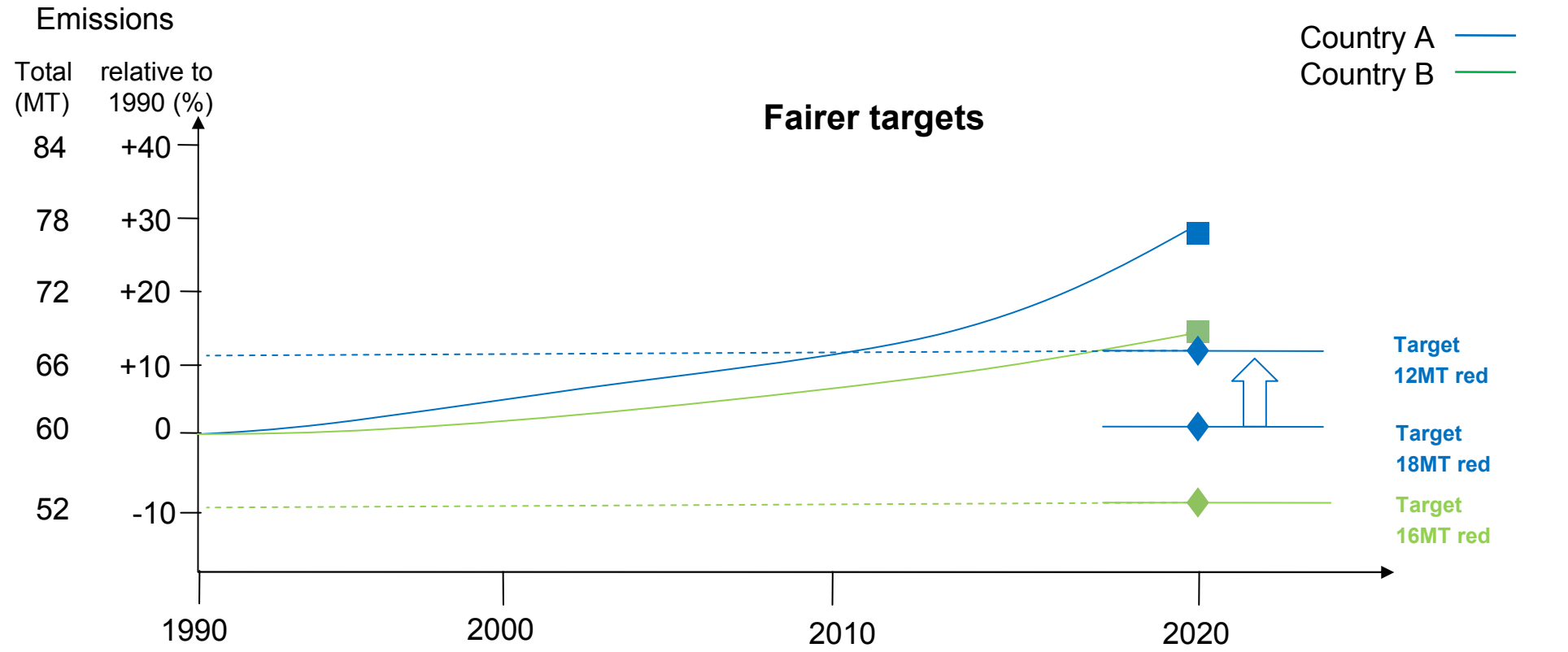

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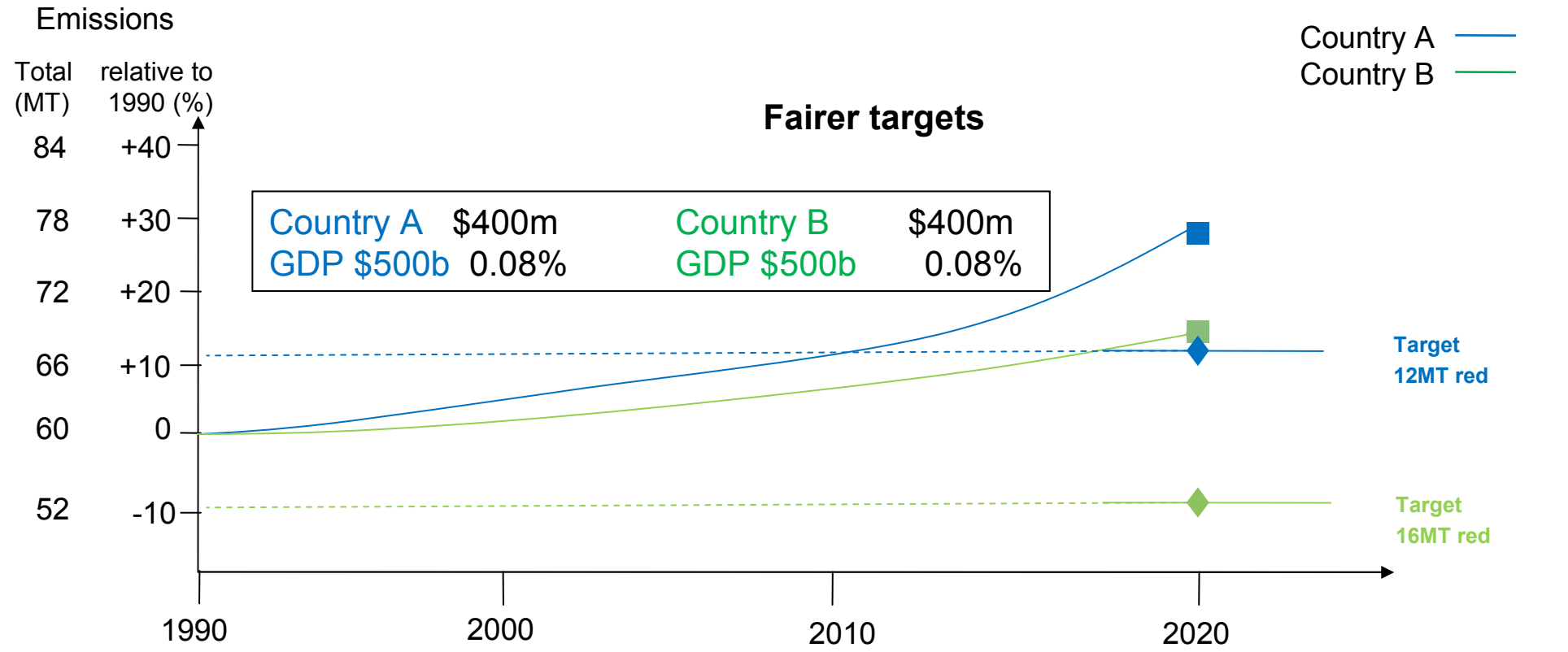

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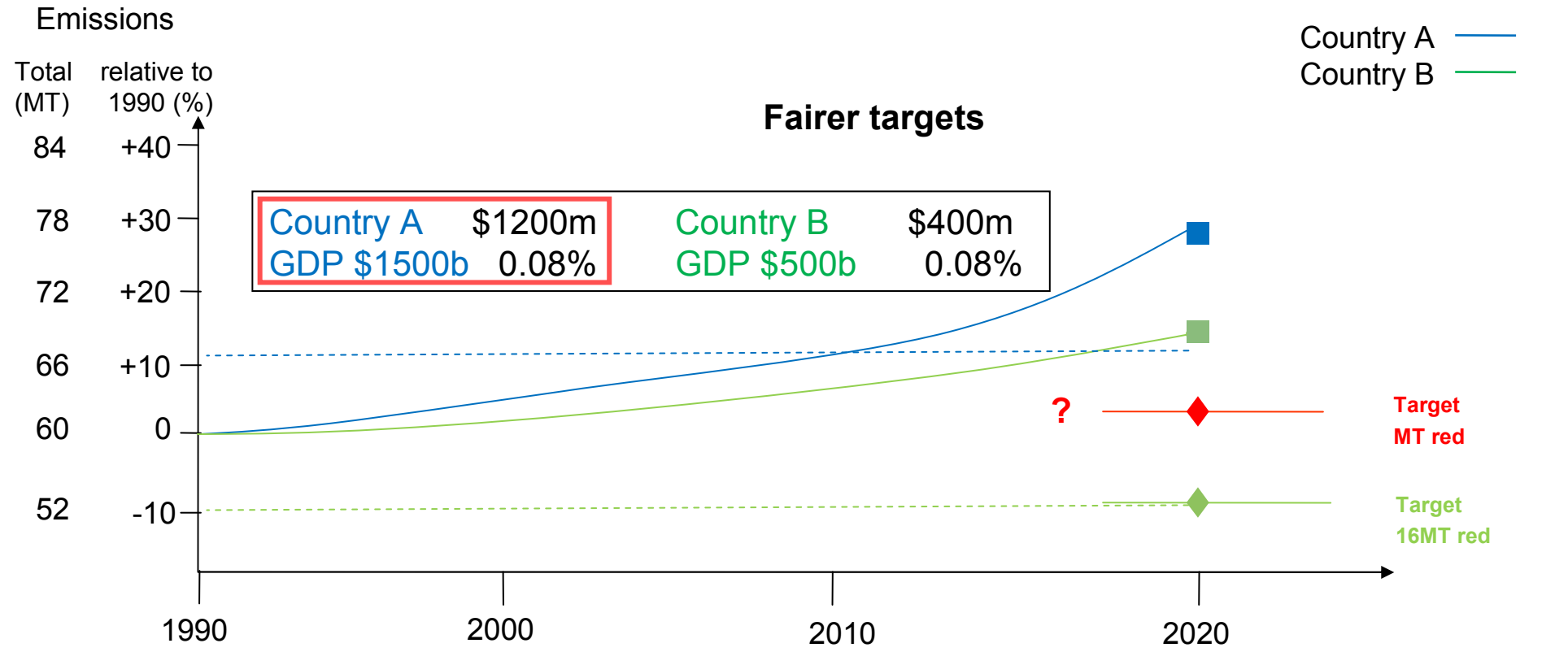

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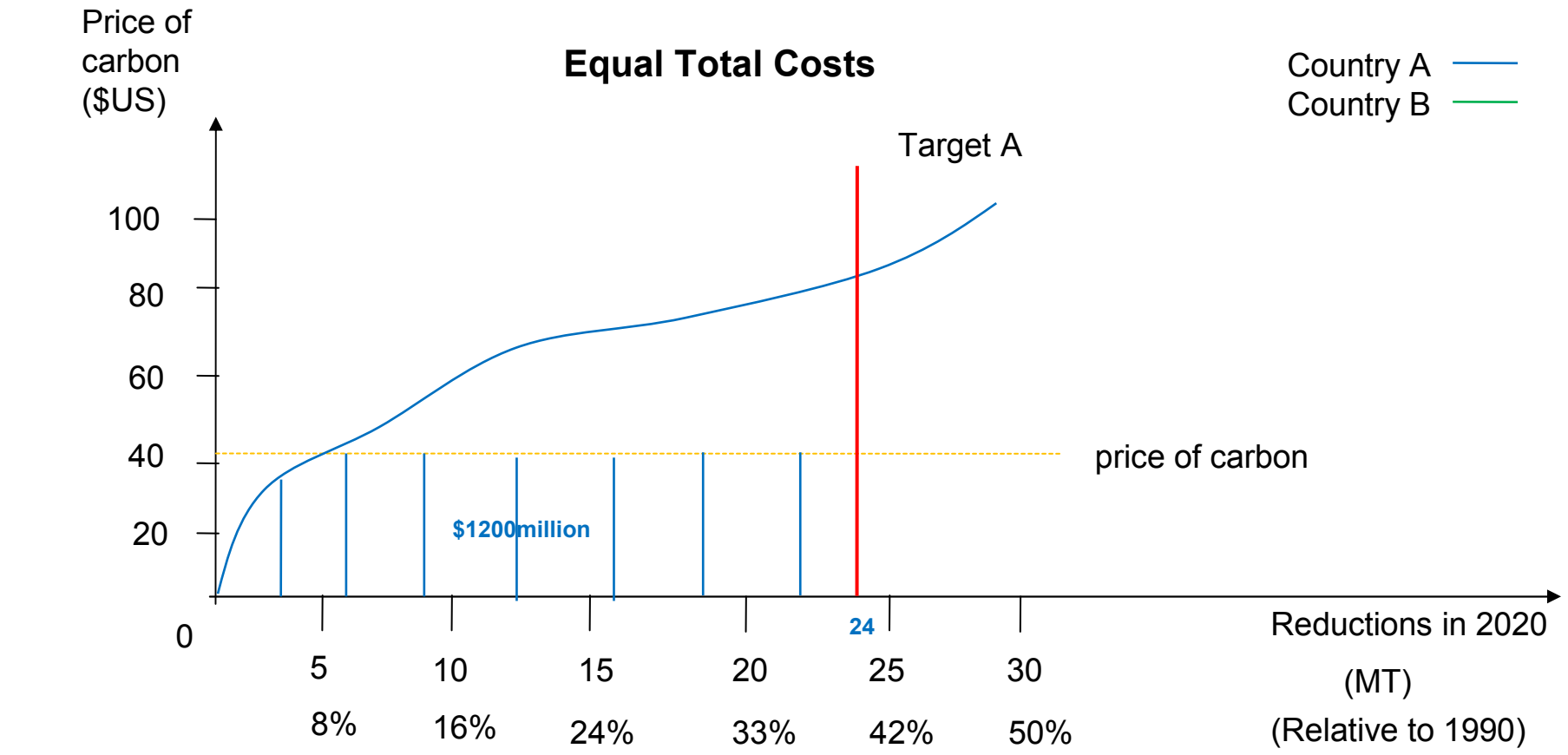

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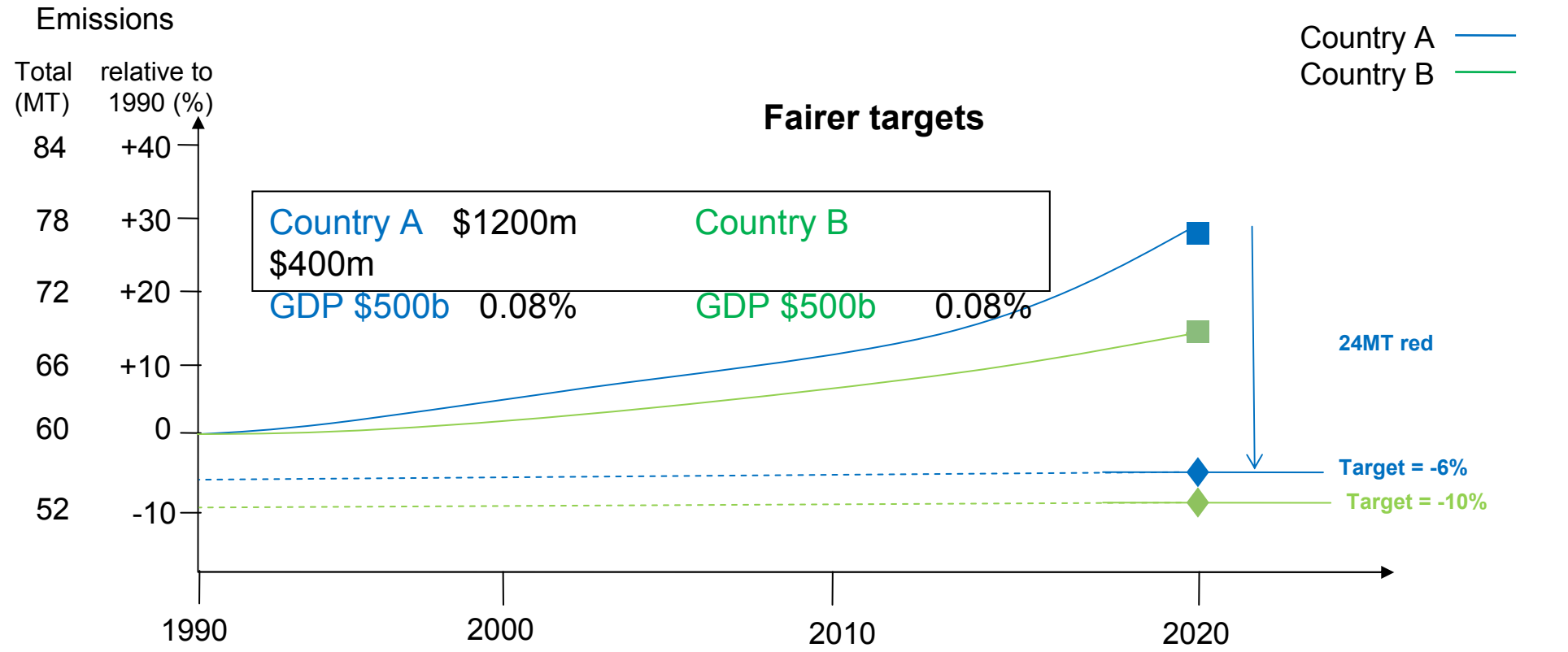


Assessing Comparable Effort (ACE) Framework

Sharing the costs equally between countries is a useful start

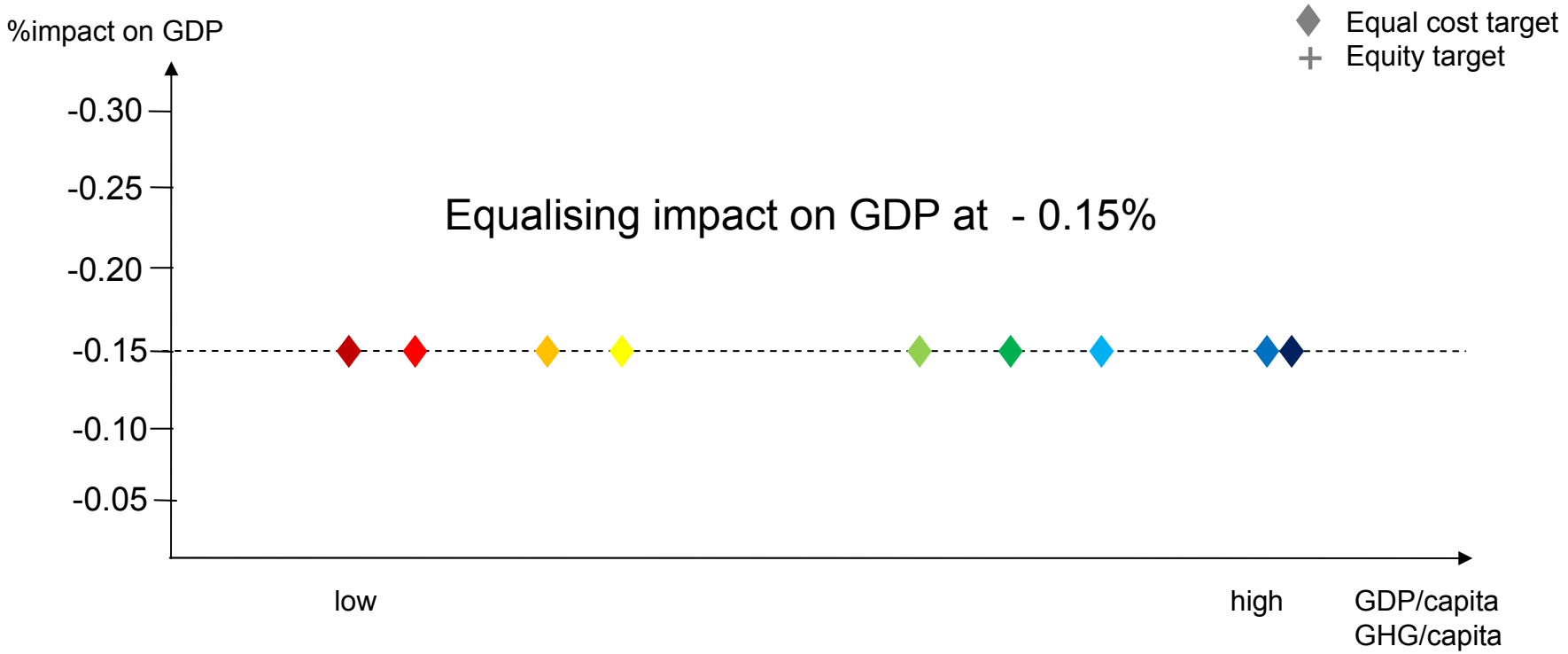
However, CBDR&RC has a broader meaning of equity

GDP/capita could be taken into account – it is widely agreed that those with higher incomes should pay a relatively greater share

GHG/capita - correlated with GDP/capita, but with an emissions focus ensures responsibility for reducing *emissions* is explicit


Assessing Comparable Effort (ACE) Framework

Integrating the equity criteria of GDP/capita and GHG/capita



Assessing Comparable Effort (ACE) Framework

3: Equity Variance