

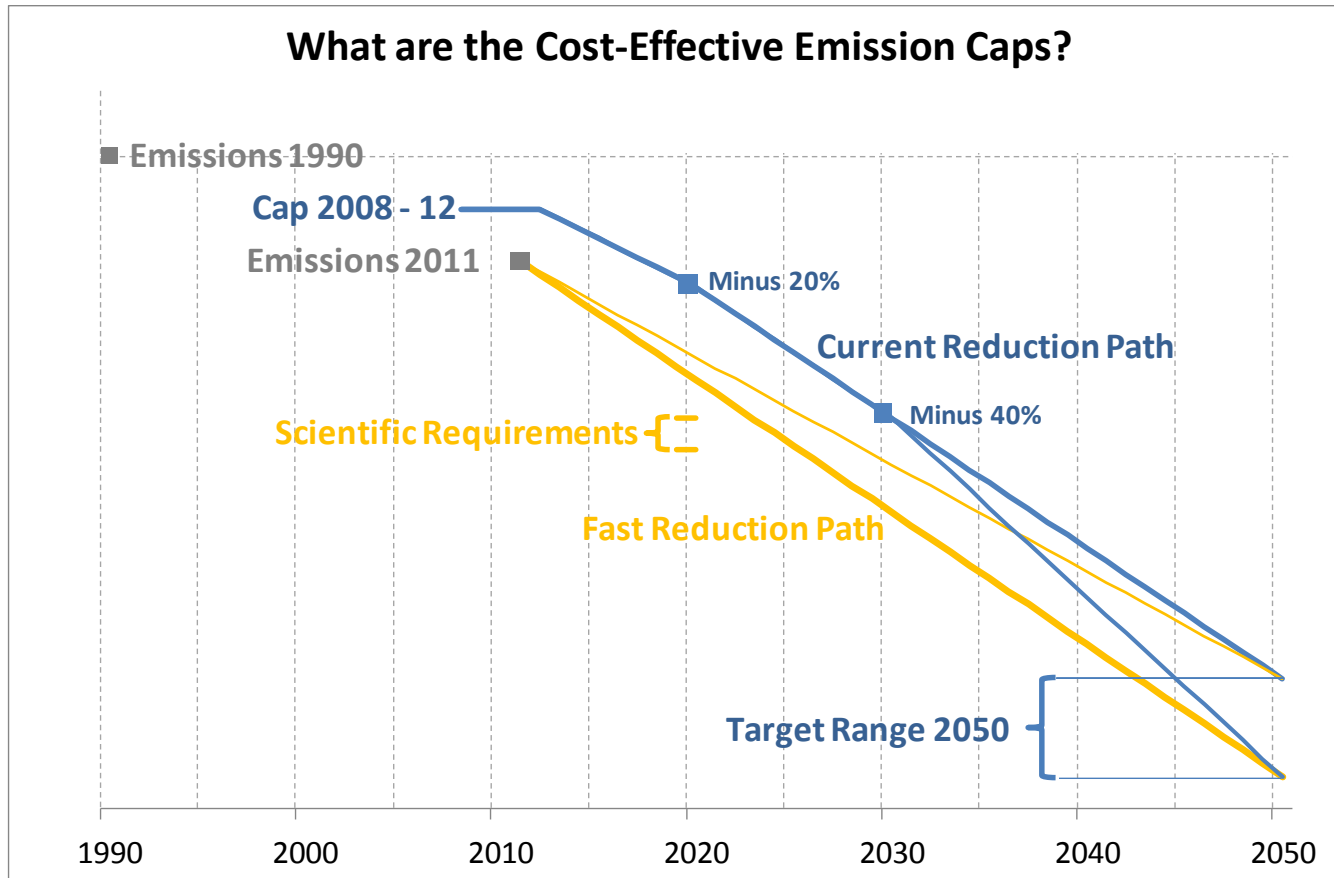
Tschach Solutions

Early Revision of the Linear Reduction Factor

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- **Markets don't optimize long term intertemporal efficiency**
- **Costs for emission reduction the lower, the earlier long term investments take place**
- **Emission markets without supply reactions tend to extreme prices (high and/or low)**



- With **current targets**, **costs** will **exponentially** grow in the long run
- Fast Reduction Path carries risk of price spikes if economies boom

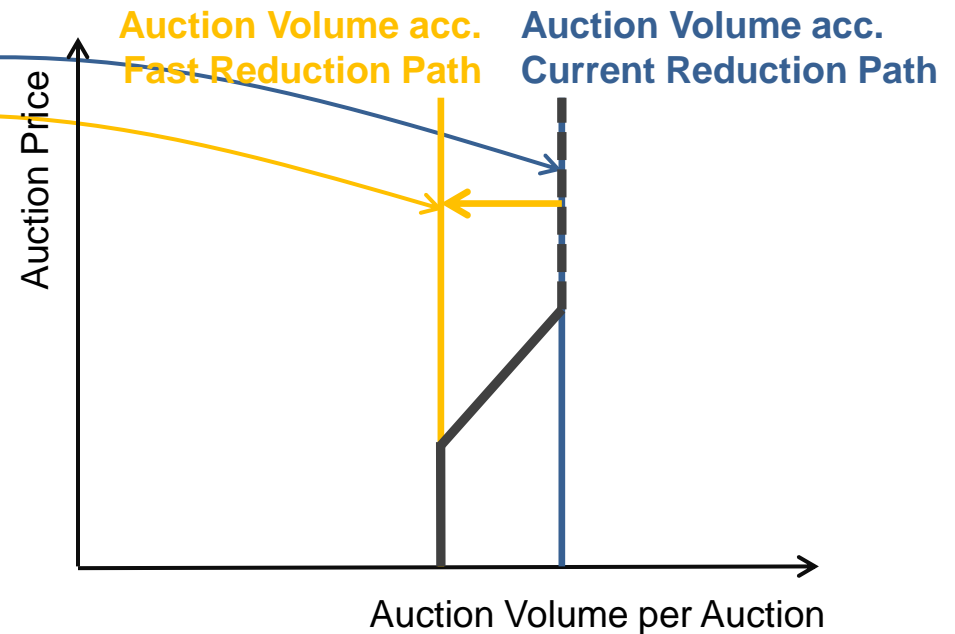
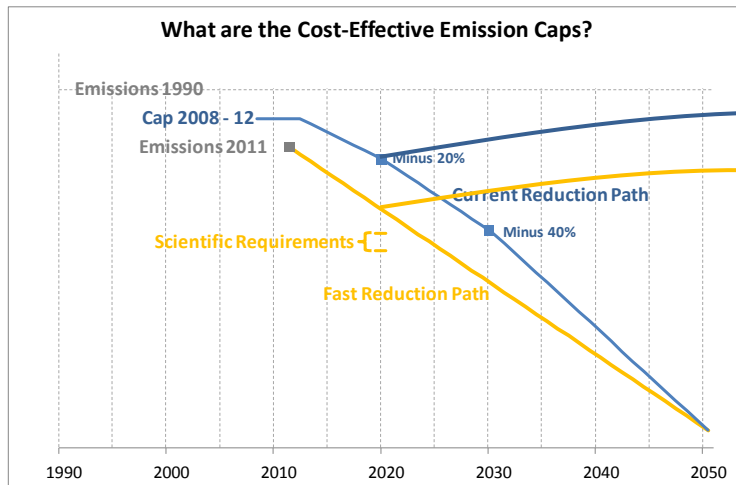
- **Current targets**
 - **Not set according to scientific requirements**
 - Set long ago, fearing extreme carbon prices otherwise
- **Carbon market**
 - **Works technically** for reaching set targets
 - **Does not work politically** targets too low in medium term yielding excessive long term carbon costs

For intertemporal efficiency / cost reduction, tighter targets are needed

⇒ **Increase annual reduction factor** (2 percentage points p.a.)

⇒ **Adjust baseline to 2011-emission levels**

- **But: Avoid extremely high carbon prices**



■ Volumes per auction

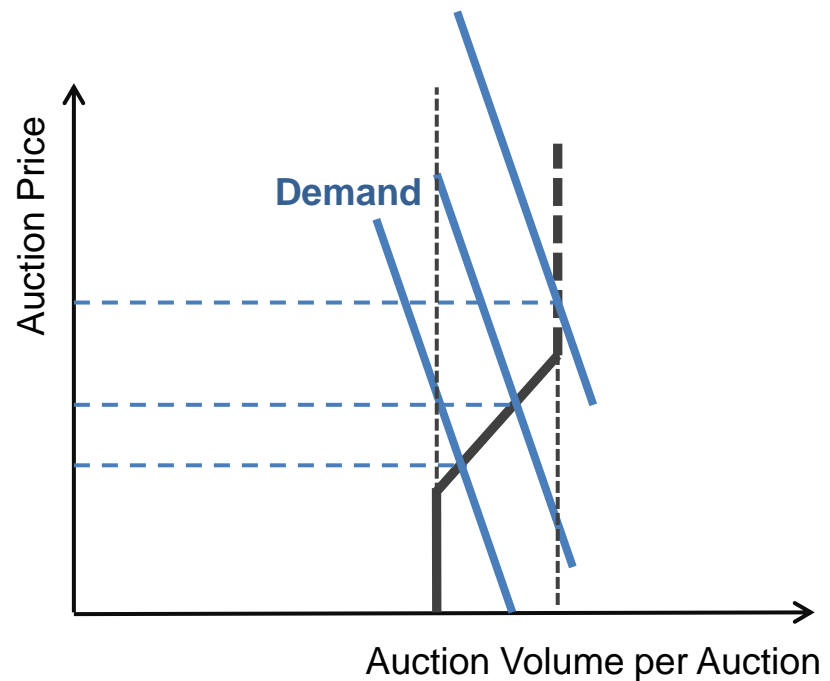
- Minimum volumes acc. to „Fast Reduction Path“
- Maximum volumes acc. to „Current Reduction Path“
- „Medium volumes“ acc. to linear supply function

Implementation is easy!

- **Decide on upper / lower reduction path (e.g. „fast“ and „current“)**
- **Decide on lower / upper price of linear reduction function**
- **Calculate min./max. volumes per auction for each year**

⇒ **Leave the rest for the auctioning platform (this is standard!)**

- Price **elastic supply**:
 - Stabilizes market
 - **Avoids excess price volatility**
 - **Reduces long term costs**
- Secures reaching target corridor
- Increased environmental impact
- **Facilitates adoption to target change** in case of successful international negotiations



Proposal

- **Adjust baseline to 2011-emissions**
- **Increase linear reduction factor** (2 percentage points per year)
- **Avoid price spikes** by adding some additional price-elastic supply volumes

Results

⇒ Improved **intertemporal efficiency**

- Earlier long term investments
- **Increased R&D activities**

⇒ **Automatic stabilization** mechanisms for carbon market

⇒ **Lower long term costs** for ETS compliance companies

Tschach Solutions

Thank you!

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