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Deutsches Institut für  
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# **Green Industrial Policy – Conceptual considerations and lessons for the Netherlands**

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## Industrial policy

*... encompasses sets of measures that governments use to influence a country's economic structure in the pursuit of a desired objective*

**Standard objection 1:** *“Governments should not ‚pick winners‘. Markets better at identifying promising business cases“.* **Partly yes. But:**

### **(a) Theoretical case for correcting market failures**

- Environmental externalities
- Coordination & information failure
- Dynamic knowledge spillovers
- Bounded rationality ...

### **(b) Societal optimum not necessarily = market optimum**

**(c) it's not about bureaucrats telling entrepreneurs what to do – but facilitating, coordinating ...**



## Modern industrial policy is about ...

- *facilitating stakeholder dialogues on direction of structural change, moderating different viewpoints, finding compromises & creating consensus on broadly defined development pathways; adapting regulatory frameworks and incentive schemes such that creative entrepreneurial search processes are encouraged and channeled towards the achievement of agreed goals.*

**Standard objection 2:** *“Industrial policy may lead to misallocation and political capture“*

Yes. Smart design is important to keep this under control !



*„It's not about if we need industrial policy, but about how to design it“ (Rodrik, 2004)*

- Co-design policies closely with firms
- ... without being captured by interest groups („embedded autonomy“)

*“We make binding customized agreements with the 10 to 20 largest emitters of greenhouse gases. ... tailor-made agreements... government facilitates the new energy infrastructure and we make agreements about ambitious sustainability (and) continued long-term investment (in the Netherlands).” (Coalition Agreement)*

- Compulsory co-financing by beneficiaries
- Sunset clauses
- Make public service providers business-like and customer-oriented
- Involve private service providers & encourage competition (e.g. using tenders)
- Monitoring, evaluation, checks and balances !
- Separate policy formulation, funding, implementation, M&E
- .... etc.



## **Industrial policy is about anticipating structural transformations and adapting fast to reap early mover advantages**

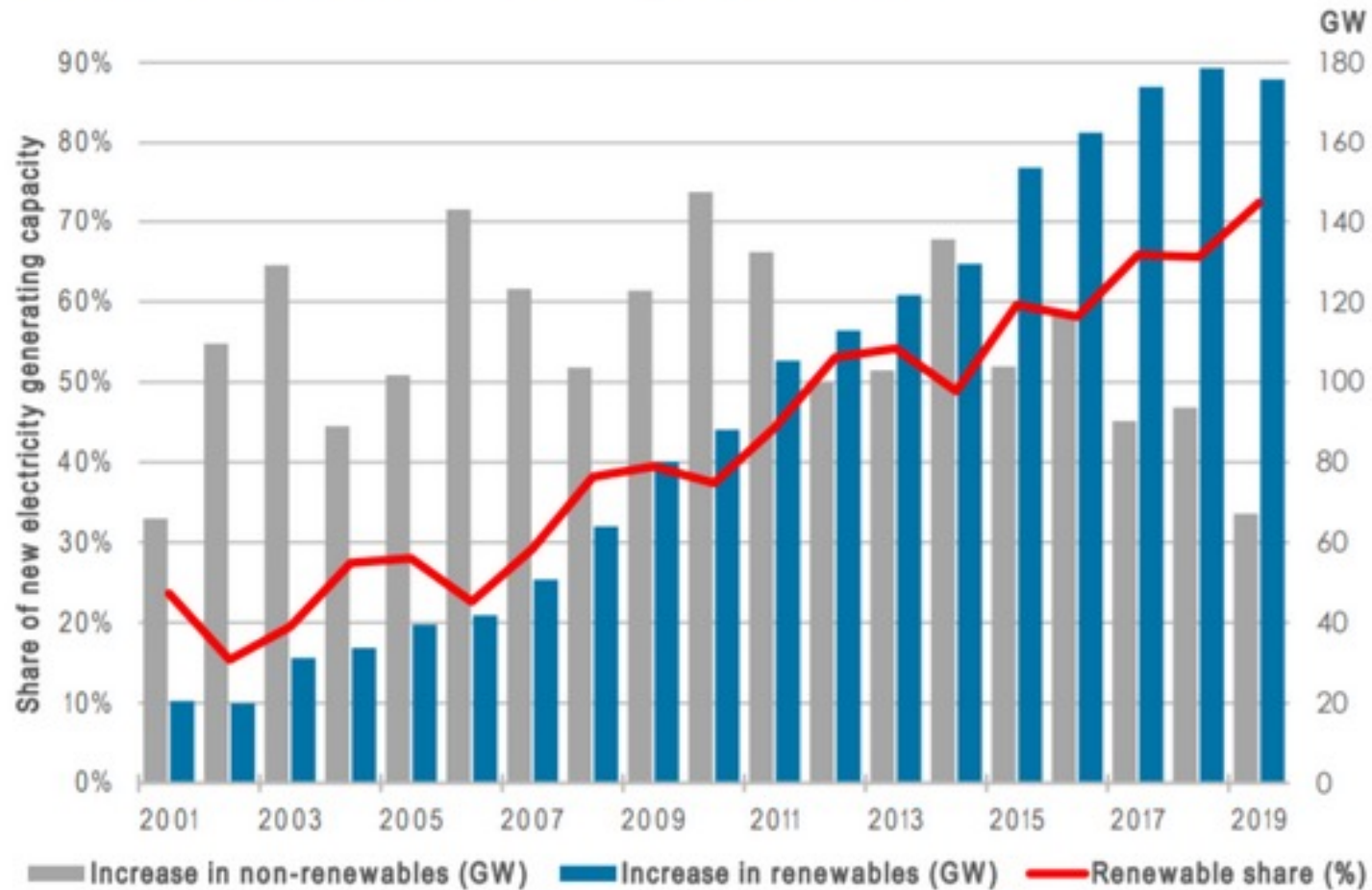
*“The industry of the future runs on clean energy and bio-based raw materials and makes circular products. It is our ambition to be at the forefront of this transition to a green industry. This requires a green industrial policy. ... we ensure that Dutch industry in Europe and worldwide sets the sustainable standard. In doing so, we strengthen the business climate and maintain sustainable employment in the Netherlands.” (Coalition Agreement)*

- **... and industry trends towards green industry are irreversible:**

# Anticipating structural change early on



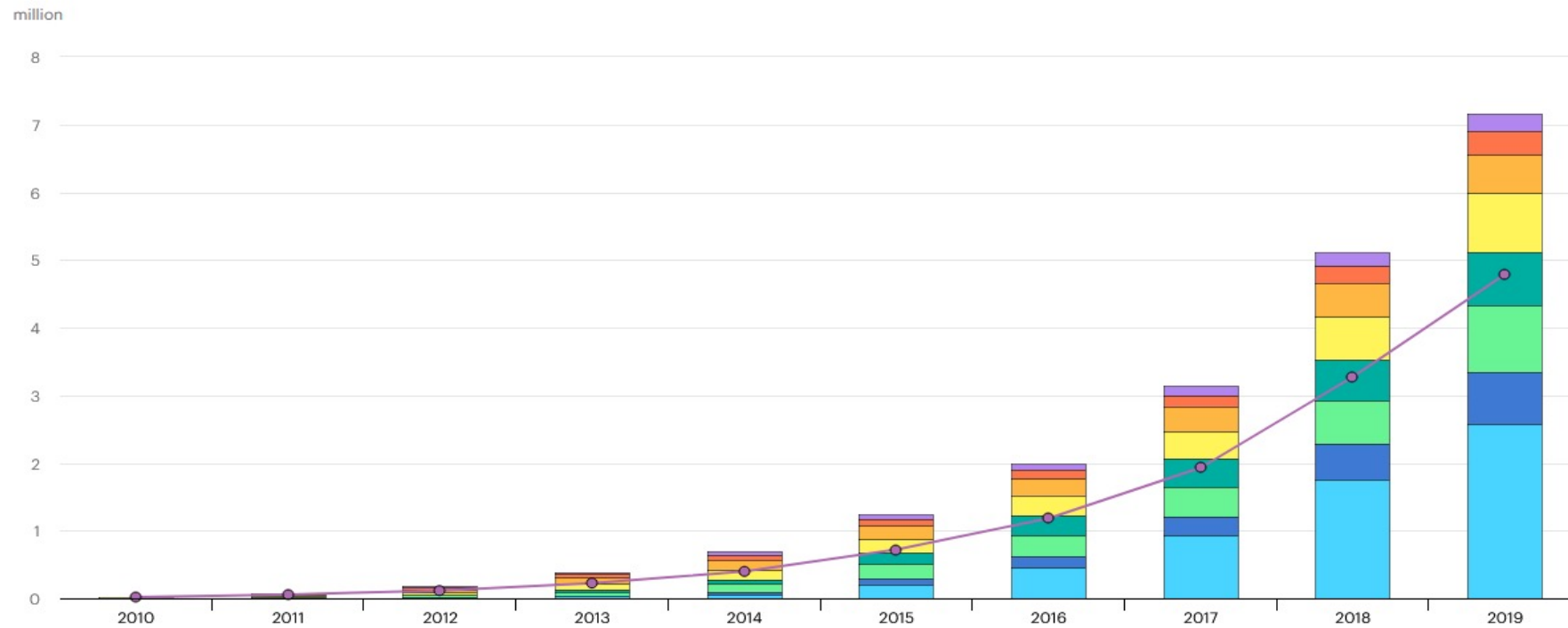
Renewable share of annual power capacity expansion



<https://cleantechnica.com/2020/04/13/the-fossil-fuel-renewable-energy-inflection-point-3-perspectives/>



## Transport sector transformation taking off

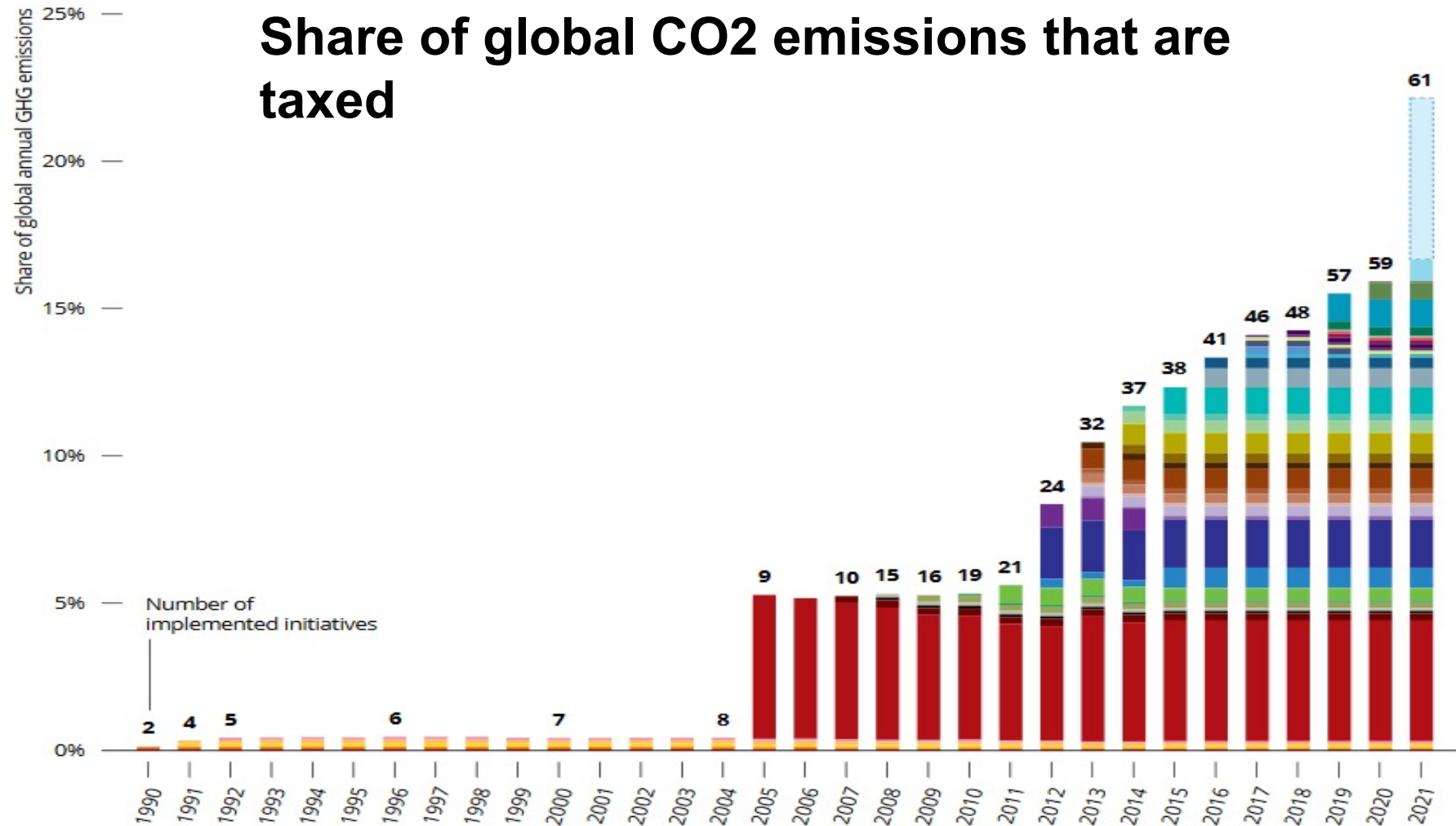


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● China BEV ● China PHEV ● Europe BEV ● Europe PHEV ● United States BEV ● United States PHEV ● Other BEV ● Other PHEV ● World BEV

Source: IEA

# Anticipating structural change early on



<https://openknowledge.worldbank.org/bitstream/handle/10986/33809/9781464815867.pdf?sequence=4&isAllowed=y>





## How China exploited early mover advantages in electric buses

- Electric buses emit no particular matter, no local GHG and less GHG indirectly if energy mix becomes greener
- Many cities face huge air pollution problems
- Electrifying bus fleets one of the easiest solutions
- China started around 2009 to subsidise electric buses and support R&D.
- Shenzhen first city with fully electrified bus fleet by 2017: 17,000 buses
- BYD, Yutong & other Chinese bus manufacturers market leaders: 95% world market !
- European Clean Vehicles Directives ten years delayed – European bus manufacturers VDL, Volvo, MAN, Daimler trying to catch up with China
- Big import batches now all go to BYD and Yutong



Compared to “business-as-usual” IP, **six additional challenges:**

## 1. **Focus on internalising environmental costs: taxes / cap & trade**

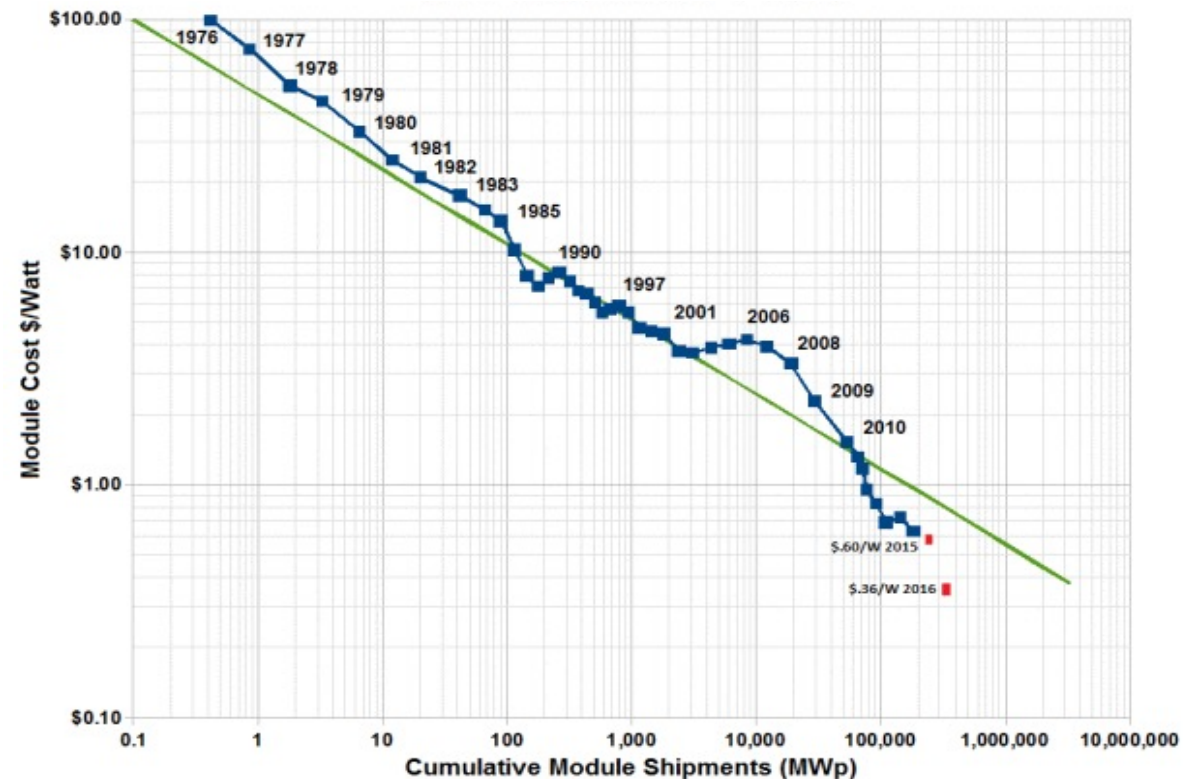
- Key element of green transformation !!
- Should be sufficient according to economic theory – but in practice it is not, due to other market failures (coordination failure, non-appropriability of innovation rents ..)
- Political economy challenges: Coping with resistance from citizens & business => accompanying measures needed, e.g. revenue recycling for
  - Industrial competitiveness of energy-intensive industries: Carbon contracts for difference = grants towards operating and investment costs for the use of low-carbon technologies
  - Avoiding high energy bills of (poor) households: subsidies, social protection systems ...



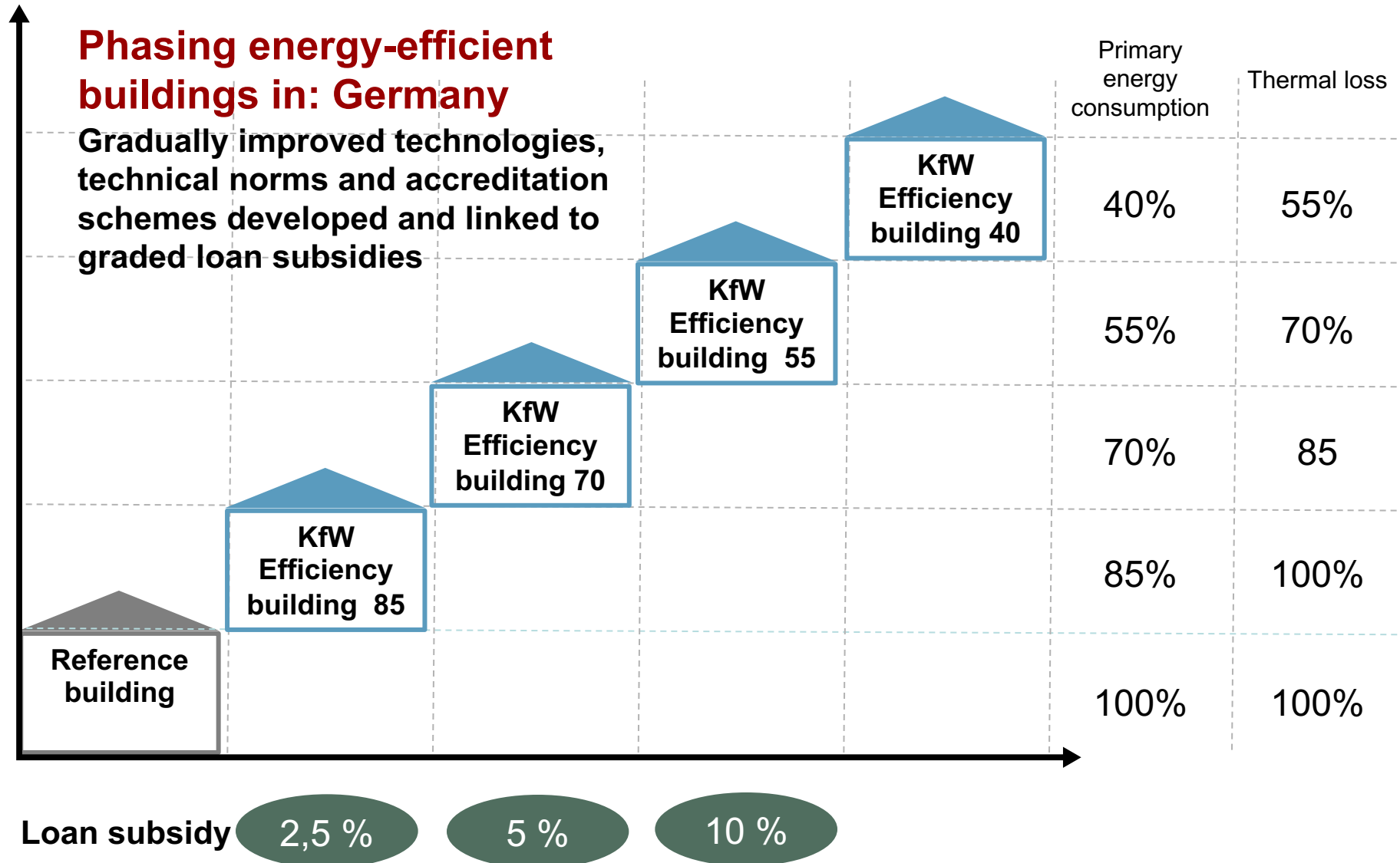


## 2. Ex-ante distinction between “good” and “bad” technologies

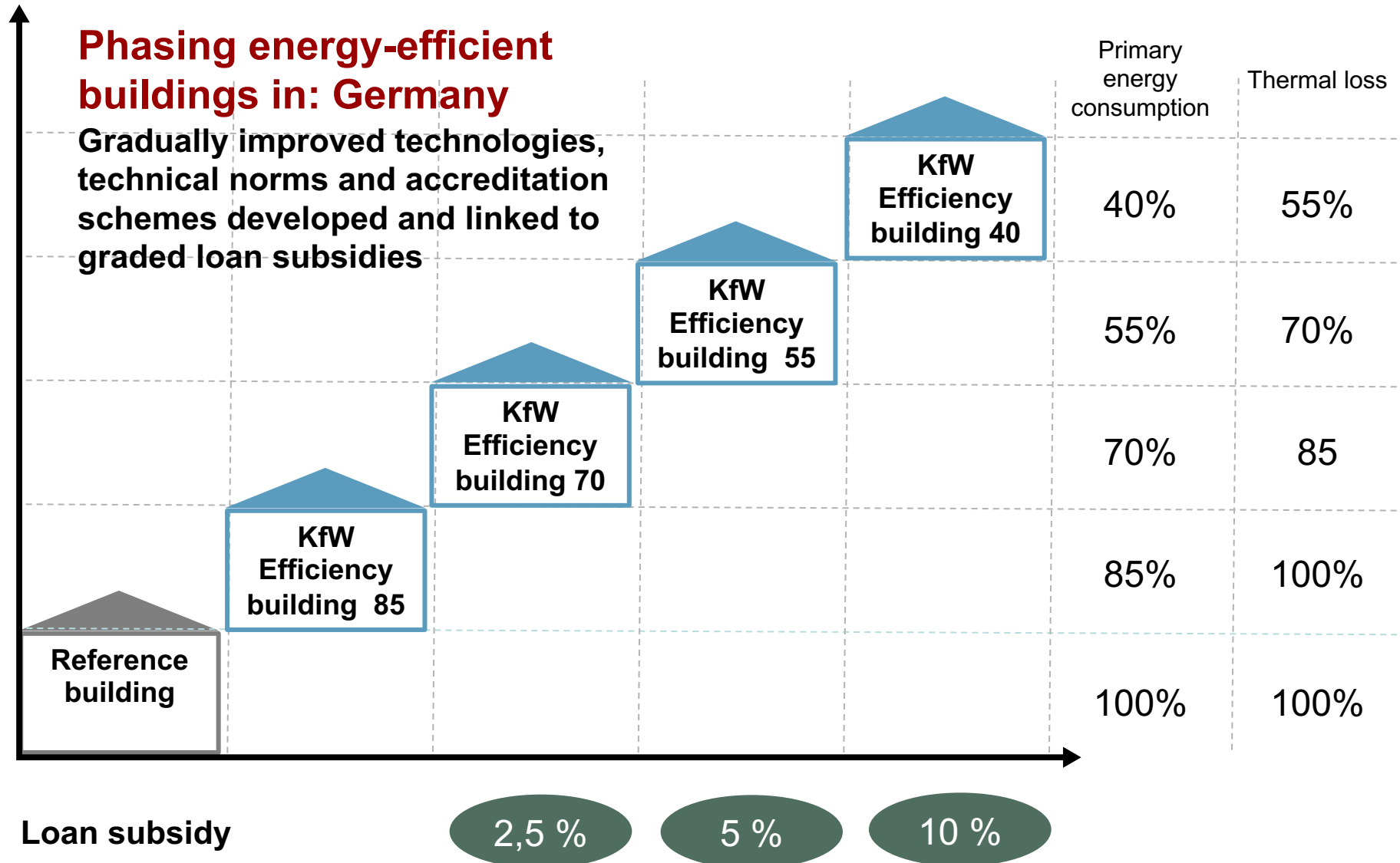
- Systematic steering of investment behaviour in a socially agreed direction
- Proactive **phasing out** of polluting technologies (fleet emissions standards for cars; road maps; NDCs)
- **Phasing-in** using graded standards, incentives for early adopters etc.
- Subsidies justified to accelerate cost digression (“Swanson’s Law”)



# How is Green Industrial Policy different



# How is Green Industrial Policy different





## 3. Urgency to act (to avoid overstepping earth's bio-capacity)

- “First industrial revolution against a deadline”!
- **Acceleration** / big push as a key principle!
- Example: R&D missions for key technologies (green hydrogen, energy storage; smart grids; second generation biomass ...)



## 4. Increased uncertainty / long time horizon of change

- Time horizon of transformation not in sync with economic & political planning horizons
- Required: **Societal agreement on long-term roadmaps**
- Credible policy instruments to sync planning horizons (investment guarantees, provision of long-term capital loans...)
- At the same time: flexibility to react to technological and societal change
- Example: Feed-in-tariff auctioning: 15-20 years guaranteed off-take & long-term price guarantee, but auctioning in batches to adapt prices to technology cost digression



## 5. Additional policy interfaces

- Policy coordination among **multiple** interest groups:
- **Example:** Electric mobility: manufacturers (auto, chemical, new materials, electronics, city planners, mobility providers, big data companies, environmentalists: *Germany's National Platform Electromobility:*
  - *Chancellor's backing*
  - *Co-led by four Ministries, joint secretariat*
  - *Involves 170 stakeholders from car driver's lobby to environmental NGOs*
  - *Roadmapping with specialized working groups led by industry, but pluralistic*



## 6. Dealing with Global Commons

- Some environmental goods = global commons (climate, oceans)
- GIP to be aligned with multilateral approaches for tackling global challenges – but no strong mechanism ... UNFCCC Technology Mechanism etc. fairly weak



**See also:**

<http://www.un-page.org/greenindustrialpolicy>

**Thank you for your attention!**

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