



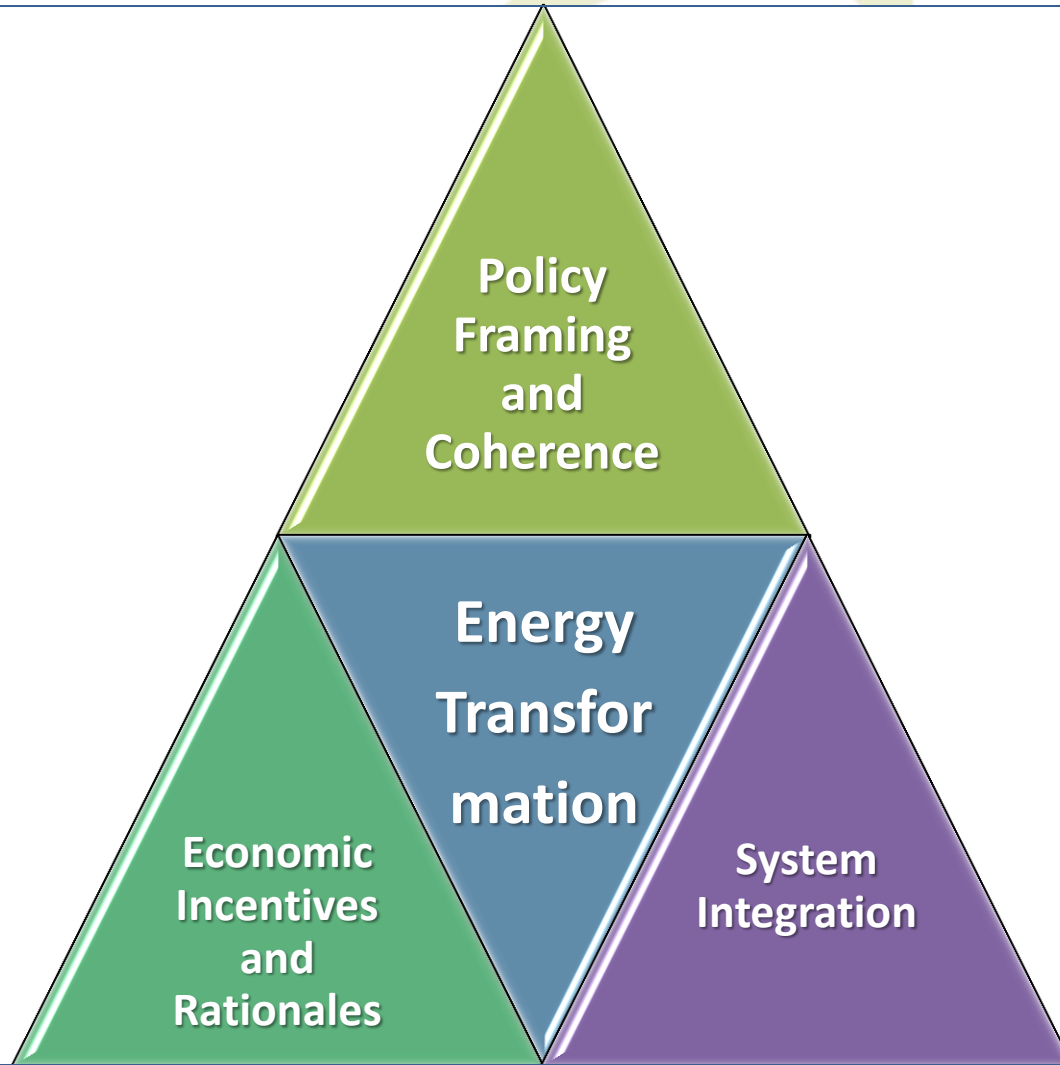
# The German “Energiewende” — Making Energy Transitions Successful

Dr. Peter Hefele | Director

Regional Project  
Energy security and Climate Change Asia-Pacific

Konrad-Adenauer-Stiftung

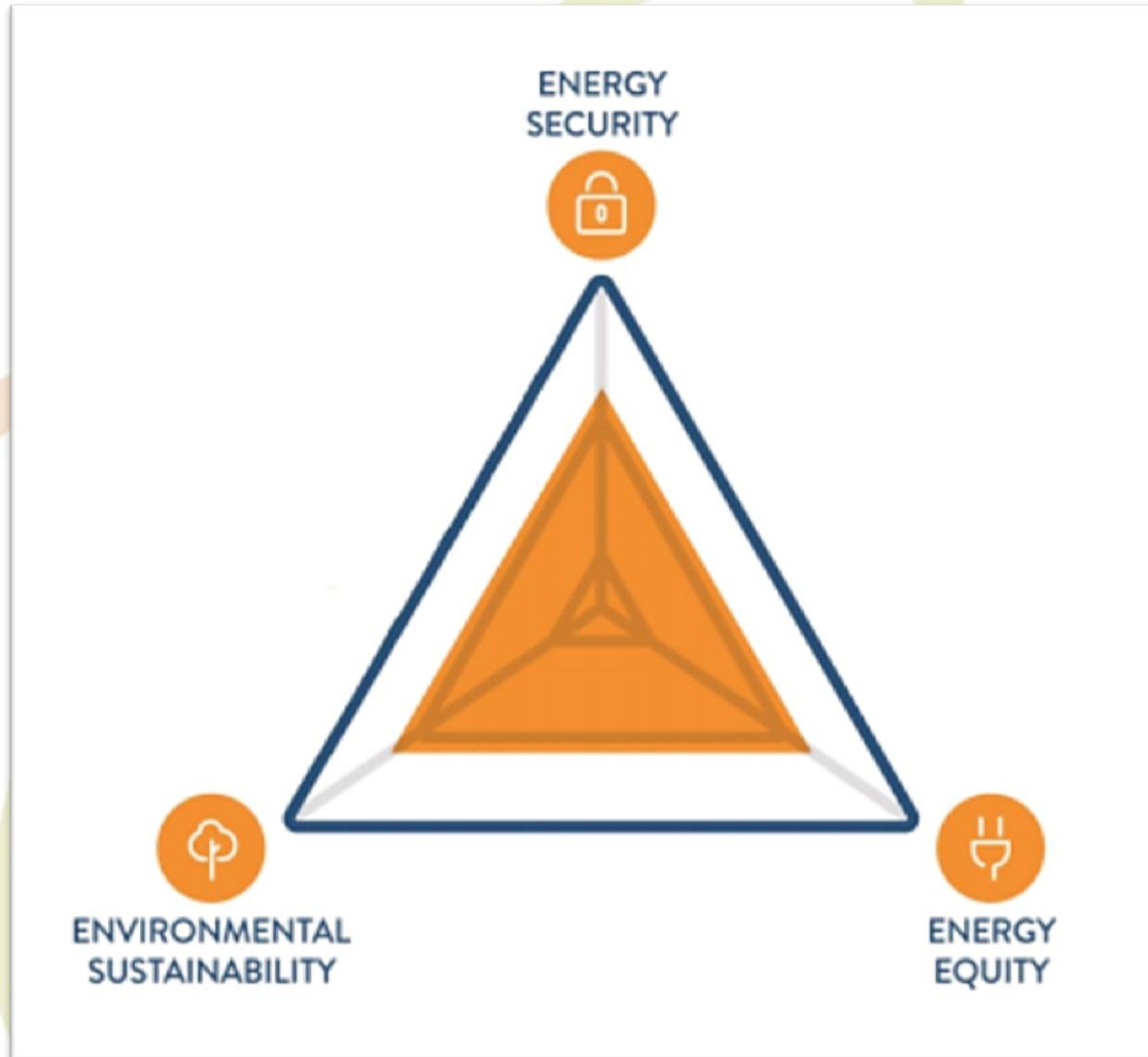
# Key Dimensions



# European Energy Strategy



# Policy Trilemma



# Policy framing and coherence

## Experiences

- Questioning the **narrative of a coherent** energy transition
- Challenges:
  - **“Moving targets”** in energy, climate change and environmental policies
  - **Multilevel policy approach** (UN, EU, national, federal, municipal)
  - “Energy” (and climate) policy in **close interaction with** foreign/security policy, environmental policy, industrial policy etc.
  - Huge and **persistent opposition by important stakeholders**
  - **Rise of new actors** (MNC, INGOs) and **new ways of political deal-making/negation processes**
  - **Time needed to** create legal, regulatory and administrative capacities
  - **Unpredictable** technological advancements and **new business models**

# Policy framing and coherence

## Lessons

- **Institutionalise** coordination mechanisms at top-level decision making institutions / cross-policy approach.
- **Don't aim at detailed regulations** to avoid overstretching decision making processes, implementation and monitoring of policies.
- **Create a narrative** to increase public support.
- Create **flexible cooperation** mechanisms with state, non-state and private actors.
- Create **monitoring/indicator** systems and feedback mechanisms to avoid “blind flying” and “black box phenomena”.
- **Draw lessons** from energy-related political processes **for the design of other policy decision-making** processes

# System Integration Experiences

- Talking **not just about technical**, physical integration, i.e. grid integration!
- **Energy is only a subsystem**, a core one, **but**: needs integration with other systems, i.e. transport, other resource cycles, industrial upgrading, urban/spatial development
- **Lack of coordinated enlargement** and upgrading of infrastructure due to “single-box” thinking, vested interests and old-fashioned rules (i.e. centralized vs. decentralized grid architecture)
- **Underestimation of complexity** of challenges, mainly beyond technical challenges
- **Unbalanced approach** in energy transformation process itself, focus on “production/generation side” rather than distribution, storage and consumption
- Admitting that **energy poverty** remains the biggest challenge in most countries

# System Integration Experiences

- Problems **not only within the border** of the German energy system, but:
  - Transborder connectivity and market integration with Europe
  - Unequal progress/speed/comprehensiveness of transformative processes
- **Upgrading of support systems**, i.e. training and services, too.
- System integration also between **hardware and software**, i.e. regulatory issues, business models

# System Integration Lessons

- **Create** transparent and stable **environment** of regulation and standards.
- Consider energy transformation as **part of “greater economic and social transformation”**.
- **Localize** solutions and be aware of one-fit-all-solutions.
- **Don't underestimate time** needed for system transformation and integration.
- Don't underestimate the **“soft” side** (rules, incentives, motivators).
- Increasing the space and options for development is the final goal.  
**Energy transformation is only one component.**

# Economic rationality and incentives

## Experiences

- Direct subsidisation of specific technologies, but **policy often not based on results/impact** evaluation, i.e. carbon emission reduction
- **Lock-in situations** and path dependencies due to massive investment in certain technologies
- **Intentional and unintentional distortions** of market processes and adaptation processes
- **Underestimation** of technological progress and social impacts (unequal social burden sharing)
- **Fate of first-movers** with a slower learning curve
- Whilst in Europe, in particular, in Germany, **consumers had been willing to shoulder some extra burden** to support first-movers policies → this will not be the case elsewhere
- **Lack of life-cycle-approach/holistic view:** “Green technologies” are not always the most sustainable way

# Economic rationality and incentives

## Lessons

- **Focus on** (the enforcement of) **results and impact efficiency** and let markets decide the best solution.
- Create and strengthen **independent bodies for market survey and competition control**.
- Break up monopolies as part of a **broader opening of markets**.
- Foster the **development of new business models** and **strengthening strategic forecasting**.
- Avoid long-term subsidisation (steady **degression of subsidies**).
- Make use of **leap-frogging opportunities**.
- **Don't underestimate small-scale improvements** and incremental progress (i.e. with existing fossil-fueled based systems)

# Conclusions

- Wisely combine top-down and bottom-up processes.
- Increase political and societal legitimacy of transformation projects.
- Unleash creativity and avoid lock-in situations.
- Enhance economic rationality and efficiency.
- Consider regional impact and seek for coordinated (not uniform) transformation paths with your neighboring countries.



# Thank you



**Regional Project Energy Security and Climate Change Asia-Pacific**

**MISSION: Sustainability**

Konrad-Adenauer-Stiftung e.V.  
Unit 3712, 37/F,  
Tower 1, Lippo Centre,  
89 Queensway,  
Hong Kong SAR, PR China  
Tel.: +852-2882 2245  
Fax: +852-2882 8515  
Mail: [recap@kas.de](mailto:recap@kas.de)

 [kas.de/recap](http://kas.de/recap) 

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