



Environmental Policy Research Centre

Forschungsstelle für Umweltpolitik

Convergence of feed-in tariffs in Germany, France and Spain – A pathway towards harmonisation?

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# Outline of presentation

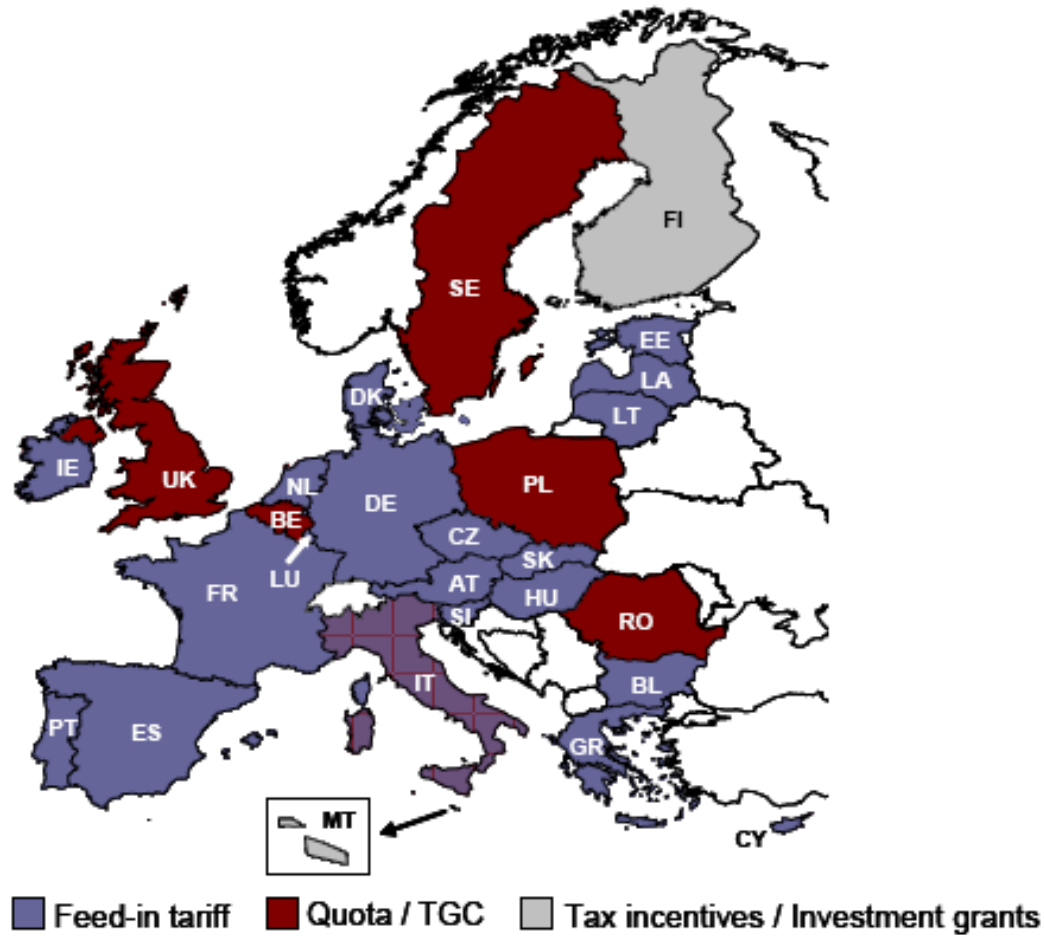
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- Introduction – RES-e support in Europe
- Research question and theoretical framework
- Preliminary results
- Outlook

## EU Directive 2001/77/EC

- First harmonisation attempt from the European Commission (1999)
- No binding target – only national indicative targets
- No agreement on harmonised support scheme (principle of subsidiarity, evaluation of support mechanisms in 2005 and 2007 including a possible proposal for a community framework).

# RES-e support schemes in the EU



## New Renewables Directive (2009?)

- Binding 20% overall renewables target until 2020
- No specific target for the electricity sector
- But: national sector-specific targets will have to be developed in national action plans (binding!)
- No harmonisation of support scheme (GO for target compliance will most likely be excluded)
- Second “harmonisation” attempt of the European Commission (failed)

# Research question and theoretical framework

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Fact I: Two top-down harmonisation attempts by the European Commission failed (based on certificate trade)

Fact II: In the long-term, harmonisation remains an objective of the EU (EC and EP)

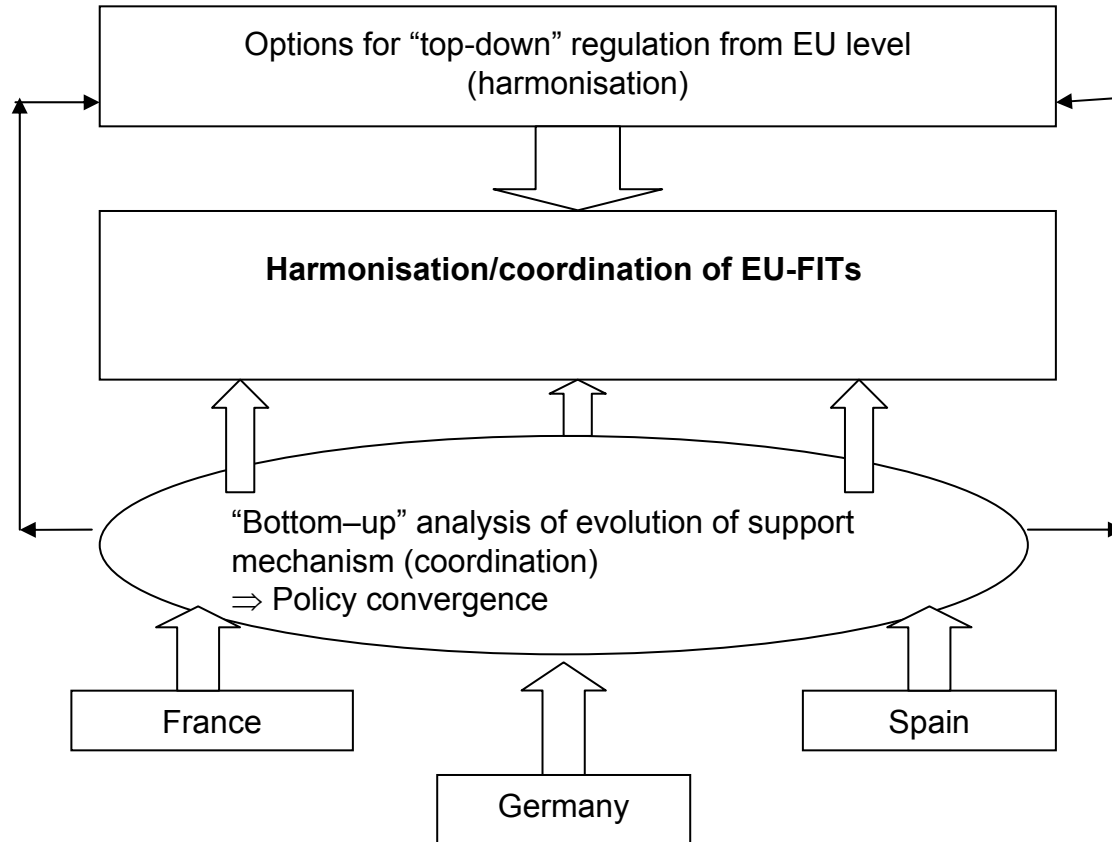
- How do we get there?

- Reverse the perspective (bottom-up approach)

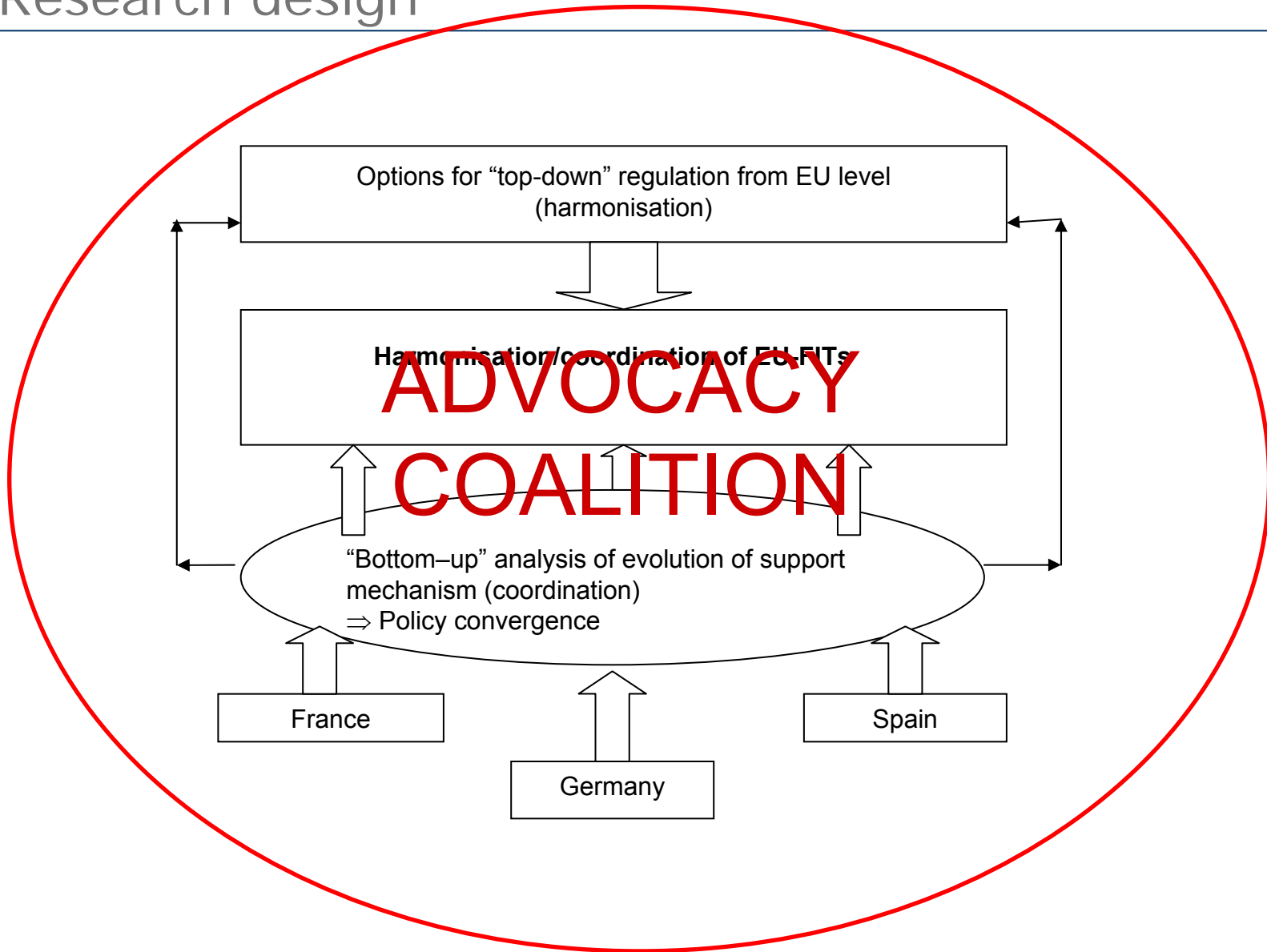
Question I: Is there convergence of national support mechanisms (feed-in tariffs)?

Question II: In how far can the convergence process be a pathway towards harmonisation?

# Research design



# Research design





# Evolution of FIT tariff design options

- **Tariff related design options**

- Number of technologies and tariffs
- Tariff calculation methodology
- Tariff differentiation (technology specific, plant size specific, location specific, tariff degression)
- Tariff development over time
- Duration of support

- **Plant related design options**

- Grid connection costs
- Definition of technologies
- Capacity limit (single plant, overall)

- **Market related design options**

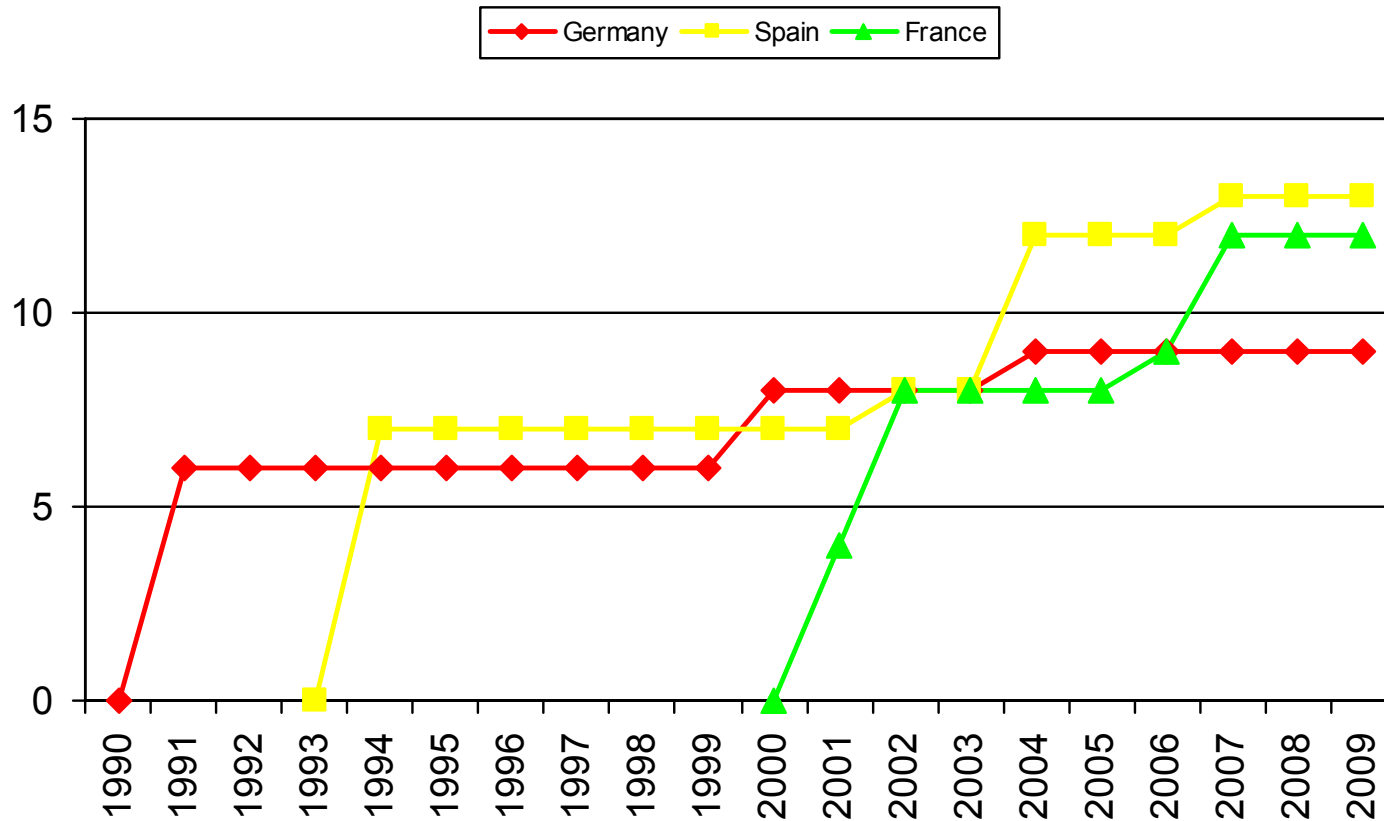
- Forecast obligation
- Premium FIT

## Preliminary results (selection)

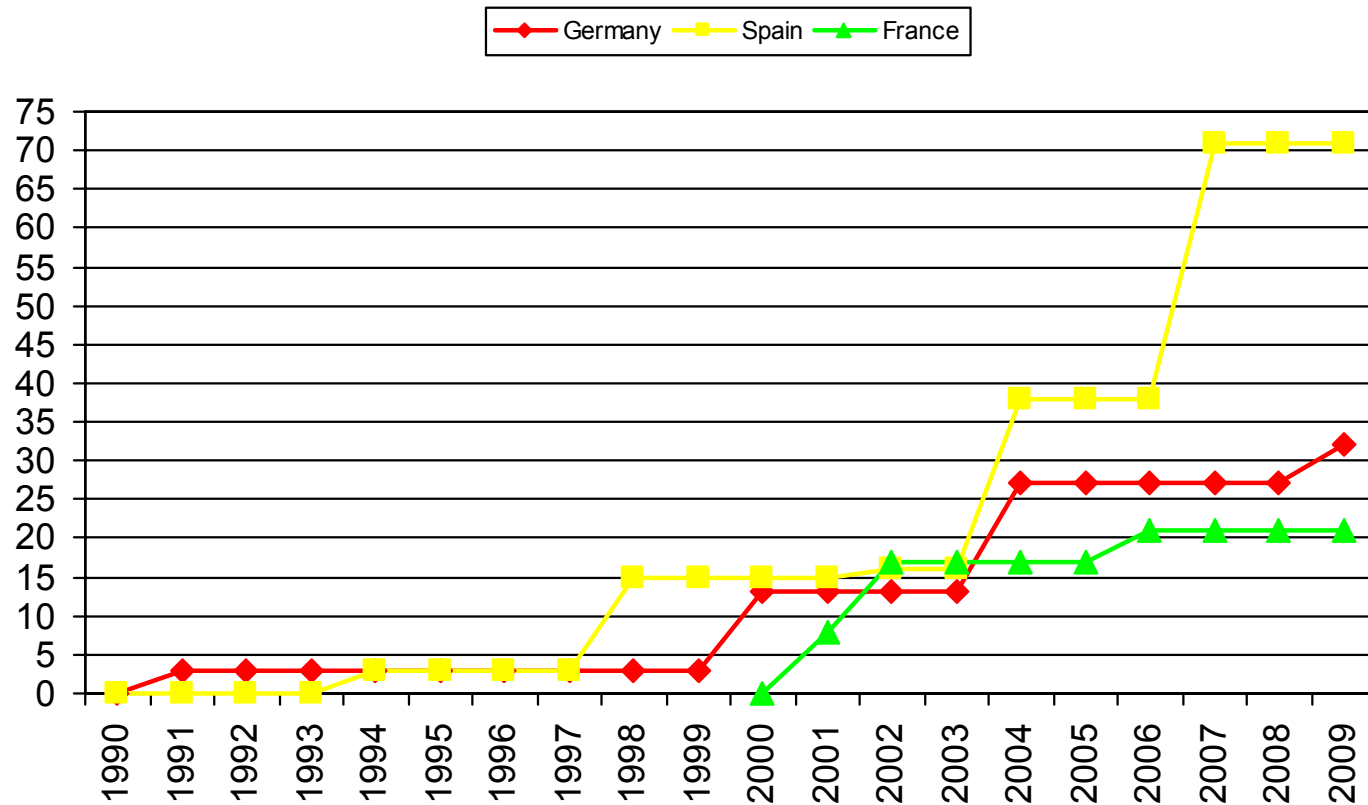
### •Convergence

- Market integration of RES-e increasingly important (Premium-FIT, forecast obligation → if large share of RES-e)
- Grid connection costs: movement from “deep” to “shallow connection approach”
- Complexity has increased (number of technology and tariffs)
- Tariffs are converging (if a similar tariff calculation methodology is applied)

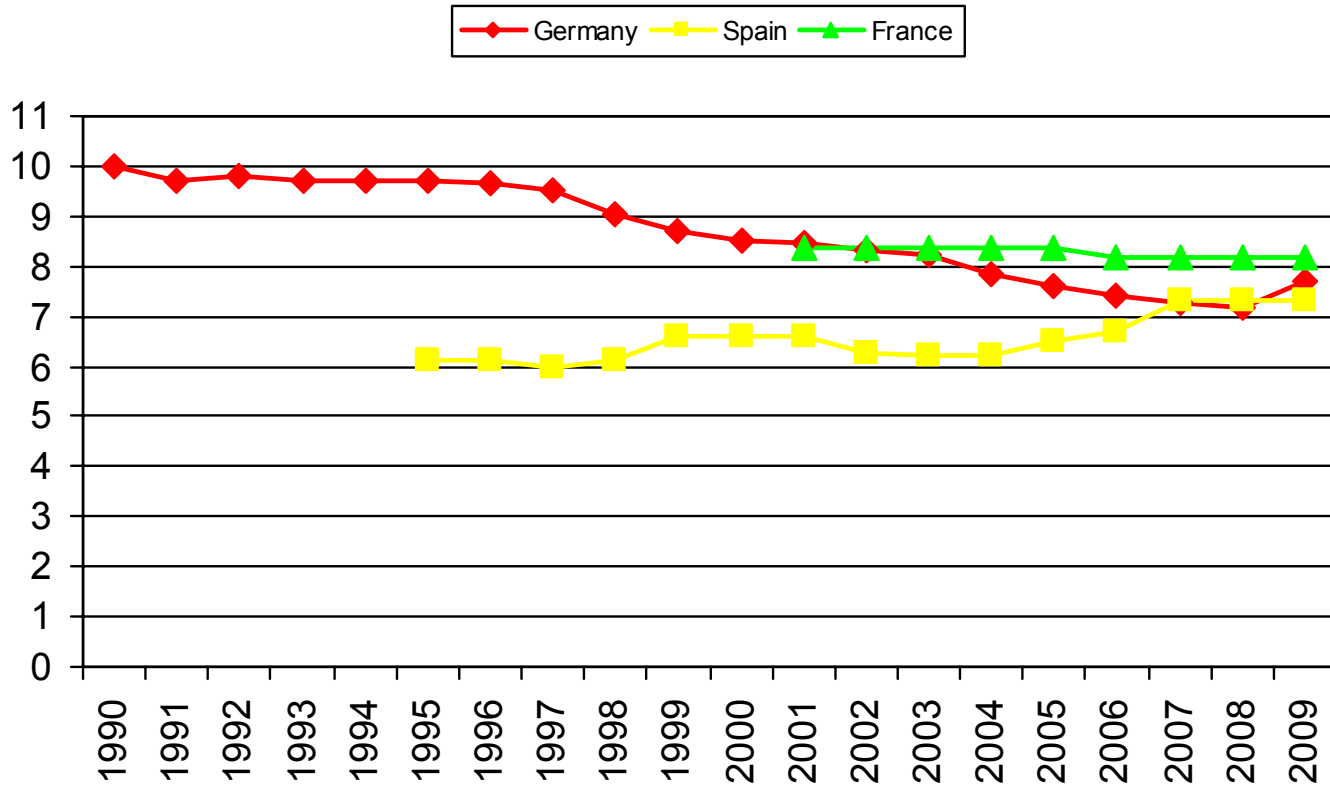
# Number of eligible technologies



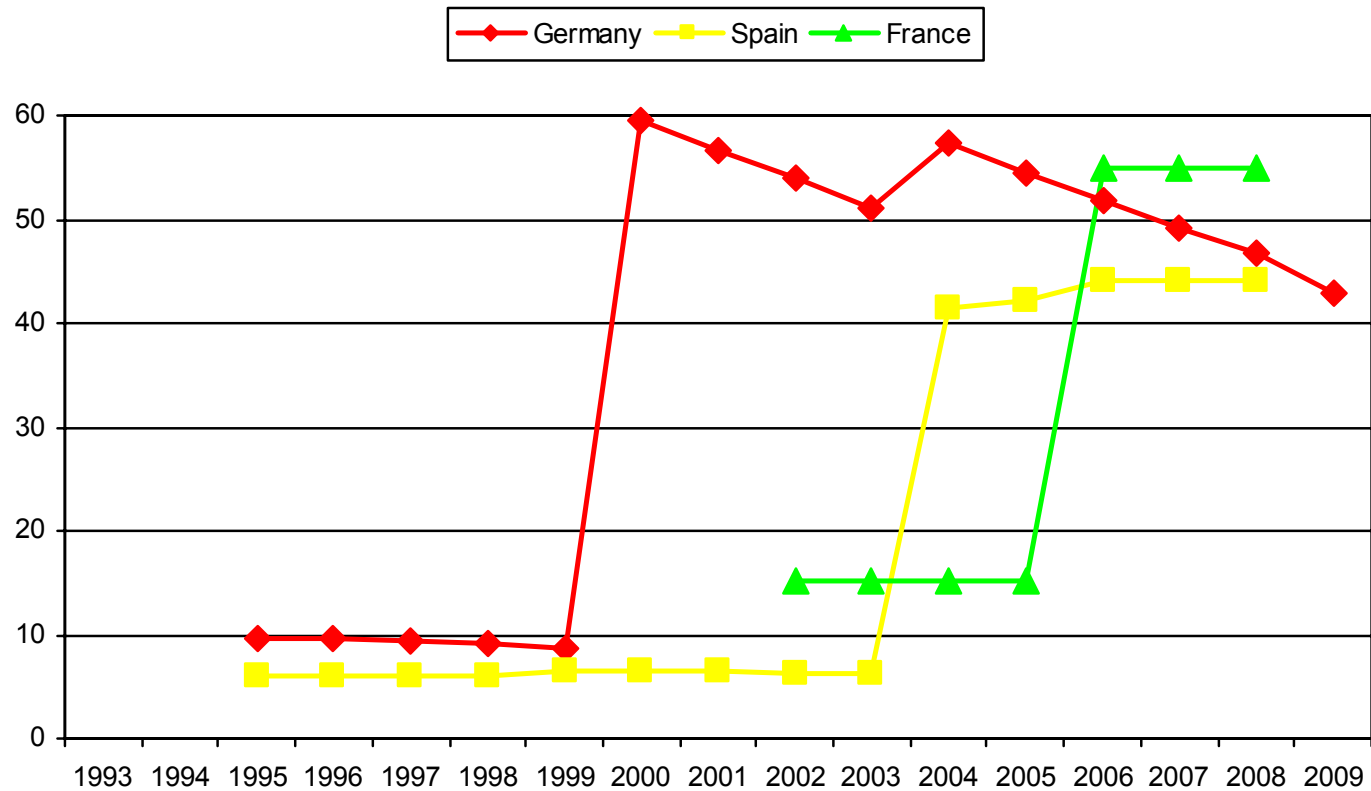
# Number of tariffs



# Development of wind tariff (2000 full load hours, onshore)



# Development of PV tariff (building integrated, 20 kW)



# Outlook

- What conclusions can be drawn from the convergence analysis for the different option of a harmonised support scheme?
  - Coordination through cooperation (IFIC)
  - Harmonisation of tariff calculation methodology
  - Harmonisation based on minimum generic criteria (stable support, technology differentiation, support all technologies that can be reasonably utilised, technology-specific tariffs, tariff degeneration).
  - Combination of EU-tariff and national tariffs
  - Harmonised, technology-specific tariff
- What can be done at EU level to foster the process of convergence?



Thank you for your attention!



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# Preliminary results

## •Convergence

- The initially simple structure of tariff was more and more differentiated over time (number of tariffs, number of technologies)
- More and more elements for integration of RES-e into conventional energy market are included (forecast obligation, Premium-FIT). This, however, largely depends on the share of RES-e to be integrated.
- Plant size restriction and overall capacity restrictions were reduced or fully abandoned
- Calculation methodology changed from “ratio of the electricity price” and “avoided external costs” to “generation costs”

## •Divergence

- No convergence with respect to plants size differentiation (different tariffs according to plant size)
- Even though other tax and investment support were reduced for that RES-e producers could solely rely on the payment of tariffs, national difference remain.