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The diffusion of support schemes for green electricity in the enlarged EU

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Outline

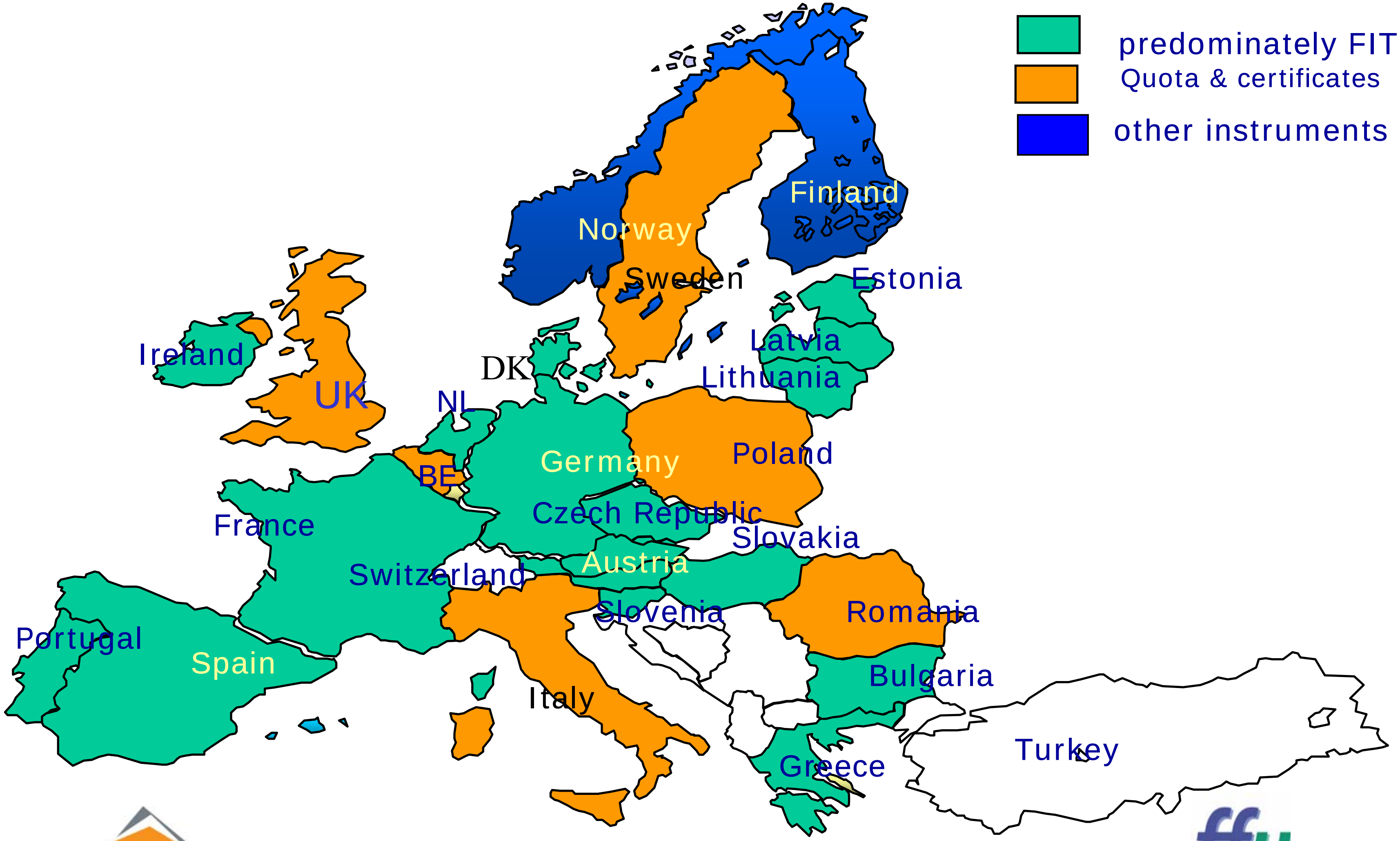
- Overview of promotion instruments for RES-E in the EU-25
- Spread of quota obligations and certificates in the EU from 1998-2005
- Overview of the quota and certificate schemes in use
- Reasons for the diffusion of quota obligations in the EU
- Diffusion of feed-in tariffs in the EU since 2001/2002
- Reasons for the diffusion of feed-in tariffs in the EU
- Factors which influence the RES development
- Success conditions of instruments for the promotion of RES-E

Instruments for promoting renewable electricity in the EU-25 in July 2005 (EC 2004b: 66; European Commission 2005: 55; Reiche/Bechberger 2005: 29).

Country	Feed-in tariff	Quota obligation + certificate trading	Tenders	CO_2/ energy-tax	Environmental funds (subsidies, soft loans, etc.)	Tax relief/ exemption/ deduction
Austria	●[1]				●	●
Belgium		●			●	●
Cyprus						●
Czech Republic	●				●	●
Denmark	●	○		●		
Estonia	●				●	●
Finland				●	●	●
France	●		●[2]		●	●
Germany	●			●[3]	●	●
Greece	●				●	●
Hungary	●				●	●
Ireland			●[4]		●	●
Italy	●[5]	●			●	●
Latvia	●		●		●	●
Lithuania	●				●	●
Luxembourg	●[6]				●	
Malta						●
Netherlands	●			●	●	●
Poland		●			●	●
Portugal	●				●	●
Slovakia					●	●
Slovenia	●			●	●	●
Spain	●				●	●
Sweden		●		●	●	●
UK		●		●[3]	●	●

● = main promotion instrument; ○ = introduction is planned; [1] only for installations which were realised until the end of 2004 (new regulation still unclear); [2] foreseen only for wind farms over 12 MW capacity; 3 parts of the revenues of the energy taxes are used to finance RES projects; 4 In April 2005, the Irish Minister for Communications, Marine and Natural Resources announced the introduction of a fixed feed-in tariff system (DCMNR 2005); 5 only for installations which were realised until the end of 2000; 6 only for installations which were realised until the end of 2004 (but new REFIT system to be adopted).

A. Overview of the main support instruments in E-25+



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Spread of quota systems in the EU-28 1998 – 2004

1998: The Netherlands (until 2001)

1999: Denmark (planned/postponed several times)

2000: Austria (for hydropower until 2003)

2001: Poland, Belgium (Flanders, Wallonia)

2002: Italy (approved by leg. Decree in 1999)

2002: UK (begun 1.4.2002)

2003: Sweden (1.5. 2003)

2004: Romania

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Reasons for the diffusion of quota systems from 1998-2005

- Preference of the previous EU-Commissions
- Pending lawsuit of the European Court of Justice
- Liberal orientation of some national economic policies (esp. UK)
- Expectation that such a system would soon apply across the EU, so that first-comers would enjoy an advantage and avoid costly adjustments to European legislation
- Quota & obligations considered to be more compatible with market criteria and liberalisation of the energy markets and expected to be more cost-effective.

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Overview of Quota and Certificates schemes(1)

United Kingdom: It started operation on April 1, 2002. The Government committed to the RES Obligation (on producers) being in force until March 2027. Compliance period is 1st April - 31st March

Mandatory Quota for electricity suppliers:

- 3% of sales by March 2003
- 5.5% (~17.7TWh) by March 2006
- 10.4% (~33.6TWh) by March 2011

Suppliers can meet their RO target by:

- Submitting Renewables Obligation Certificates (1 ROC=1MWh).
- Paying the "buy-out" for missing MWh.
- The price rises annually (now = £33-35) and have been relatively stable. In the first year there was a high liquidity because of traders speculations. Now trades are purely by suppliers for compliance.
- ROCs can be banked for only 1 year, and suppliers can only meet 25% of their quota with banked ROCs.

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Overview of Quota and Certificates schemes(2)

Italy: In operation since 2002. Mandatory quota (2.70%) on electricity producers/ importers combined with TGCs. Certificates are issued for new or repowered plants gone into operation after 1.4.1999. TGCs cover the capacity during the first 8 years (in the future 12 years) of operation of the RES plants.

- Traded partly through bilateral exchange and through auctions of GRTN. GRTN administrates the TGCs from plants built under the so called CIP-92 regime and sells them in auctions. For the 2005 RES production, GRTN fixed the TGCs price at around 0.10892 €/kWh. IAFR producers sell their TGC at a price close to that of GRTN.
- RES producers also sell green power energy (Decree No. 387 of Dec. 2003) from a “programmable“ RES plant at an average fee of 0.05 to 0.06 €/kWh.
- TGC can be banked for 3 years. Companies not complying with the obligation pay a penalty amounting to 1.5 times the TGC value.
- Since 2005 PV is supported through a FIT scheme similar to the German one

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Overview of Quota and Certificates (3)

- **Belgium**: Flanders and Wallonia have a quota obligation system based on TGCs. The obligation is directed to electricity suppliers. In Brussels no support scheme has been implemented yet
- **Flanders:** Start: Jan. 1, 2002
- All RES-E plants (new and existing)
- Special status treatment for for PV and municipal waste excluded till June 2004
- The quota is set year by year. It amounted to 0.8% (2002), 1.2% (2003), 2% (2004)… 6% (2010)
- The non compliance fine was set in 2004 at €125/MWh
- The market has not provided enough liquidity and incumbents own 80% of capacities
- The system has given life to large windfall profits and rents

Overview of Quota and Certificates schemes(4)

Sweden: A green power obligation has been in operation since May 2003 in combination with TGCs. The quota ranges from 7.4% (2003) to 16.9% (2010) and is placed on electricity consumers.

- Certificates are issued for old and new RES-E capacity (low effectiveness of the instrument!)
- Exemption from the obligation in the initial phases of the scheme for energy-intensive industries.
- The certificate price is set on the market. A minimum price is set by the buy-out price at which the government purchases certificates from producers. There is a penalty for non-compliance

Poland: Green power purchase obligation with targets specified until 2010. Lack of target enforcement. RES are exempted from the excise tax.

Spread of feed-in tariff systems in the EU since 2001/2002

2001: France

2002: Czech Republic, Slovenia, Lithuania

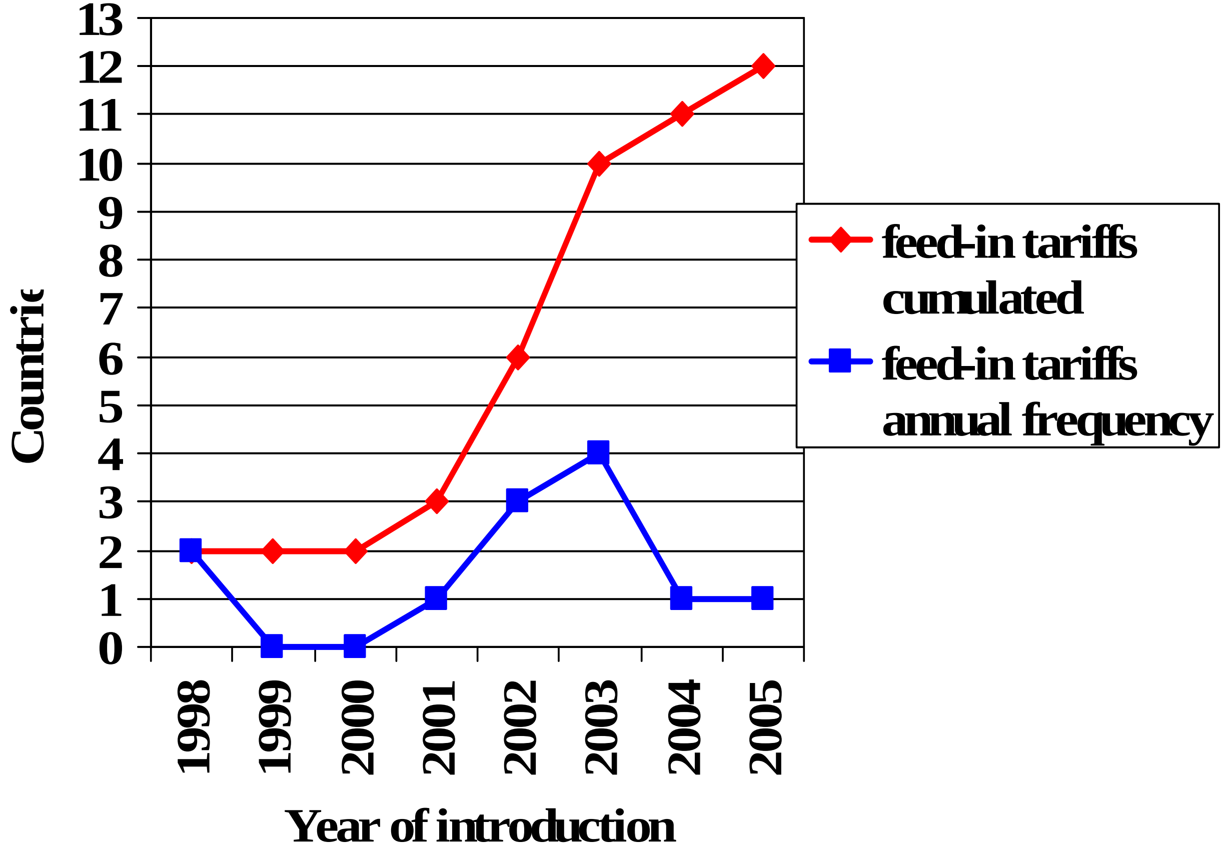
2003: Austria, Hungary, the Netherlands and Bulgaria

2004: Cyprus

2005: Turkey (coming into force expected 2006)

Planned introduction: Ireland (announced 4/05)

Diffusion course of feed-in tariff systems in the EU-28 between 1998-2005



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Reasons for the spread of feed-in tariffs in the EU since 2001/2002

- Decision by the Court of Justice of the European Communities in March 2001
- No instrumental choice in the EU-Directive on the promotion of green electricity from September 2001
- Green electricity forerunners successfully used feed-in tariffs (D, ES, DK)

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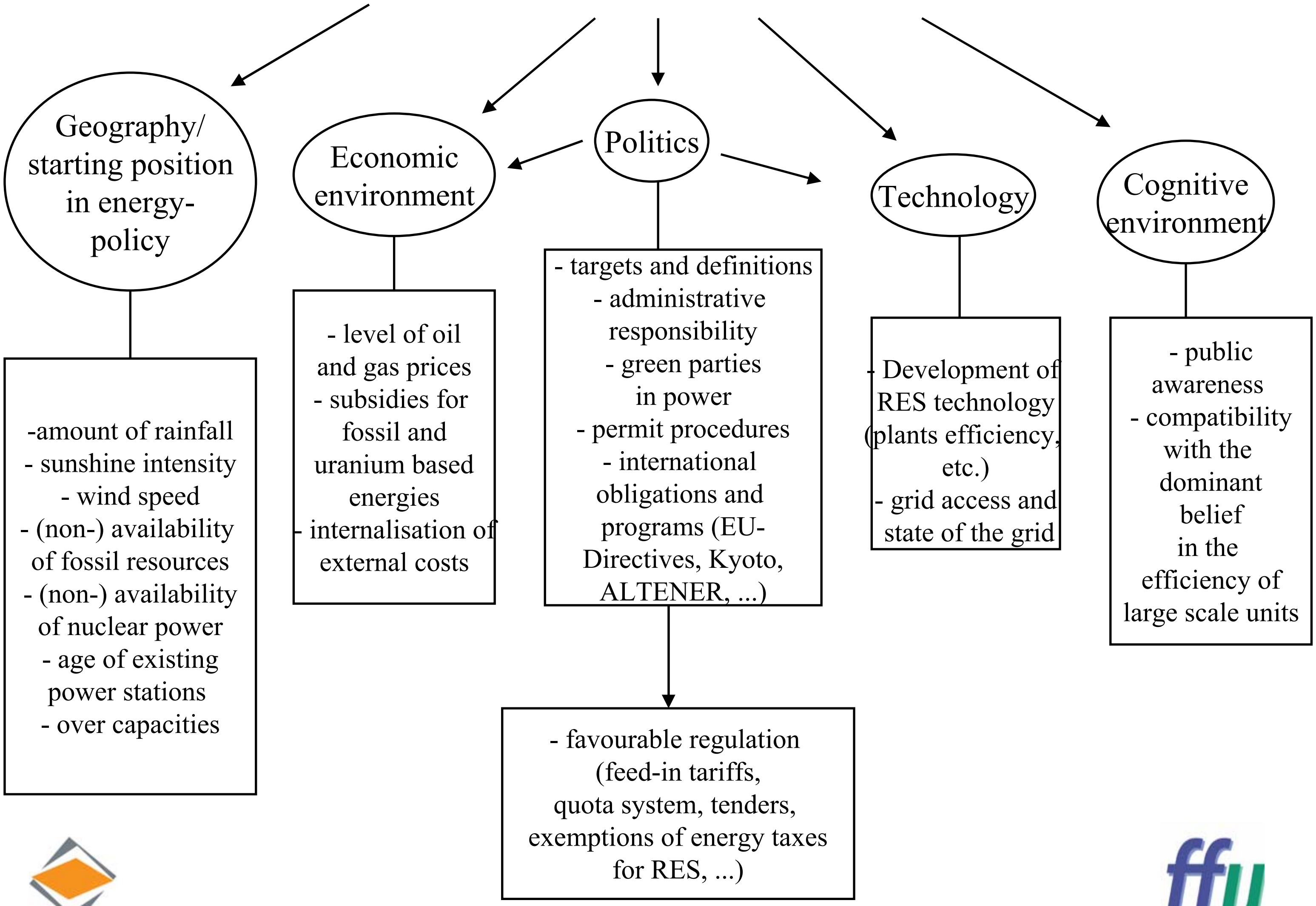
Factors which influence renewable development



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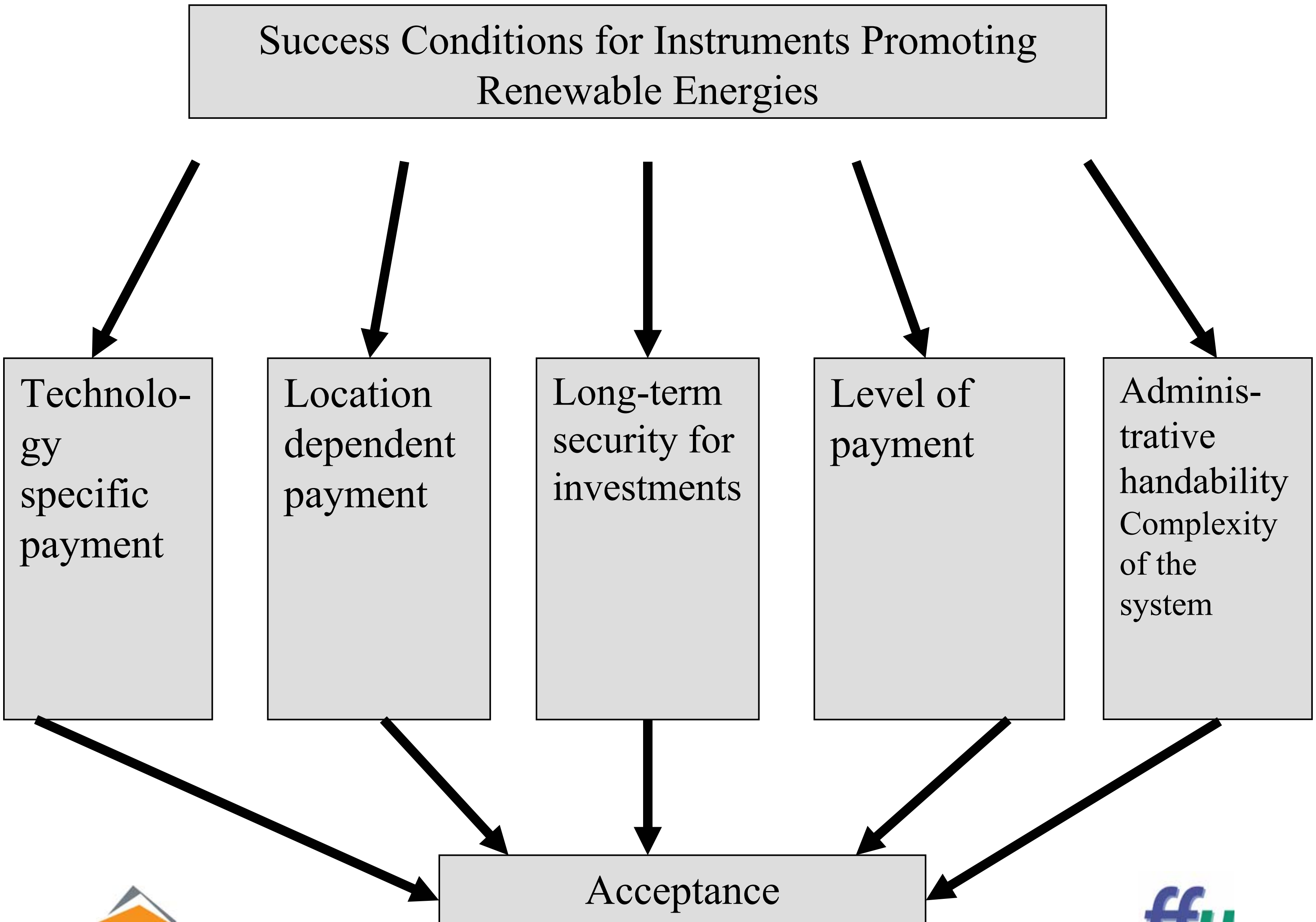
Success Conditions for Instruments Promoting Renewable Energies
Technology specific payment
Location dependent payment
Long-term security for investments
Level of payment
Administrative handability Complexity of the system
Acceptance

Résumé

• Differences in RES-use cannot only be explained with the natural conditions. Natural Conditions are an important, but not sufficient explanation for success or failure in RES policy.

• Single factors are often overvalued. Success or failure in RES policy can only be explained in combination of all the presented factors.

• Most successful countries in RES use Feed-in Tariffs. But there is no „natural“ superiority of any instrument, success depends on the specific characteristics of the tool

Thank you

for your attention

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