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Interrogating the transformative power of renewable energy support instruments: the example of feed-in tariffs for photovoltaics

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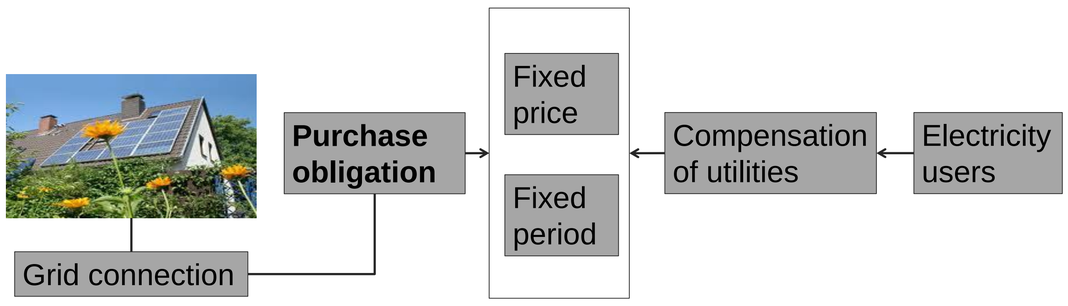
❶ Investigating the effects of FITs

Renewable energy policy in Europe largely relies on market-based instruments aimed at inducing change in socio-technical systems. In the case of photovoltaics (PV), these have indirectly contributed to dramatic cost reductions and driven an exponential increase in installed capacities. Installed PV capacity in Europe has increased by **373 times between 2000 and 2012** (Jäger-Waldau, 2013).

Feed-in tariffs (FITs) have been a central instrument in these evolutions. They have transformed makets and technologies but also society and politics. Looking at the effects of FITs « in action » sheds light on the implications and challenges of achieving political objectives through the creation and engineering of markets.

❷ What is a feed-in tariff?

FITs guarantee the financial viability of PV installations relying on 3 elements: a **purchase obligation**, a **fixed price**, and a **fixed period** of time (Jacobs, 2010). They are usually paid for by electricity users.



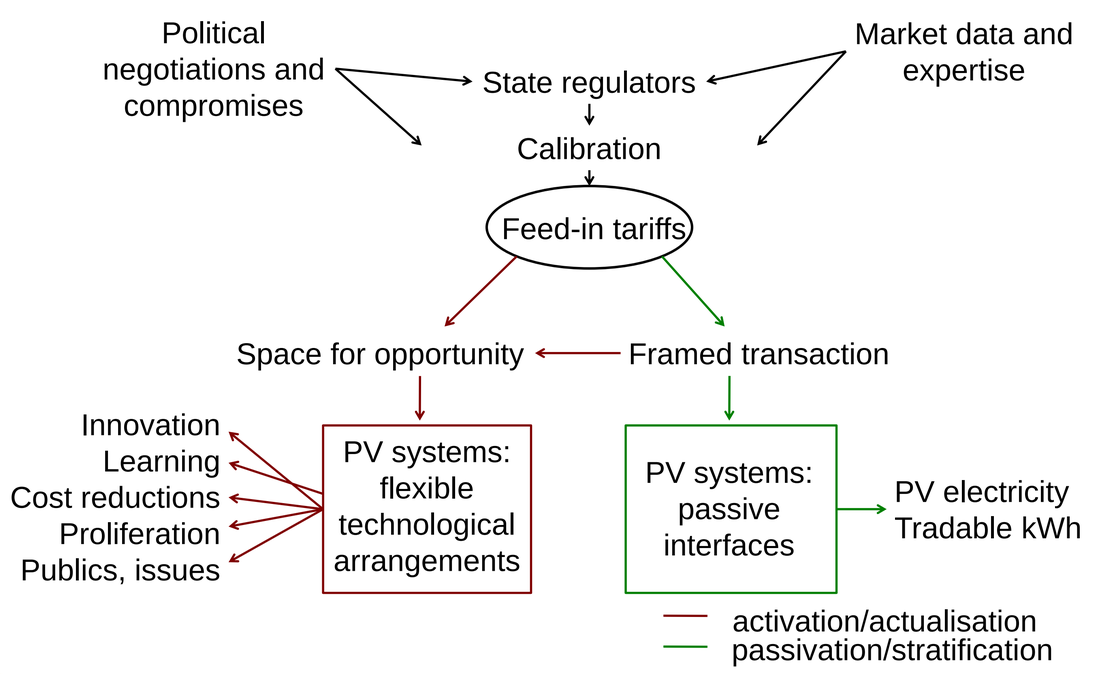
In Europe, the evolution of FITs was co-shaped by the development of **EU objectives and guidelines** for renewable energy policy, of **Member States policies**, and of **theoretical research**. They have grown **increasingly sophisticated and specific** as various RE technologies and markets have developed.

	Evolution of EU renewable electricity policy	Evolution of FITs
1988 1996	Integration of renewable energy into electricity markets and policies	Emergence and integration of FITs in the legislation
1996 2000	Elaboration of an EU-wide renewable energy policy around the objective of market integration	Constitution of FITs as an option for renewable energy support and for "levelling the playing field"
2001 2007	Scale-one experimentation, sophistication of instruments	Sophistication of FITs to adjust them to photovoltaics and to market dynamics
2008 2013	Crisis and reforms of PV-support instruments	Taking the specificities and effects of FITs for PV into account

❸ A sociological perspective on FITs

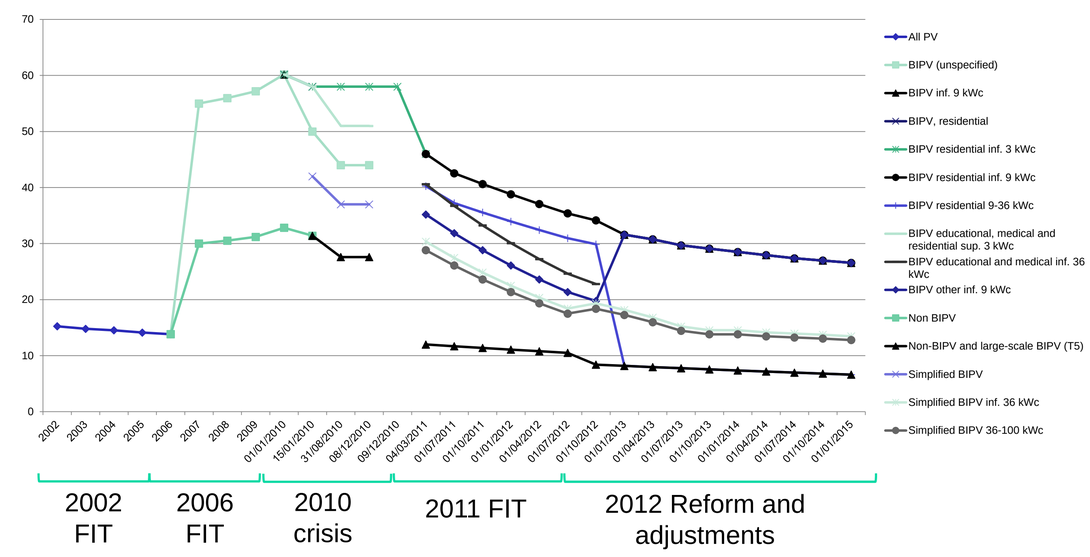
FITs:
- **Frame regulated markets** for PV electricity
- Rely on **political objectives** and management
- Aim for **large-scale deployment** with no cap on quantities
- Are meant to **induce innovation** in technologies, electricity markets and business models
- Have **unintended**, transformative effects

FITs can be viewed as **political market *agencements*** (Callon, 2013). *Agencements* are **heterogeneous arrangements** of material, conceptual, technical and social elements that both **frame and trigger action**. By providing a frame that formats and constrains economic and political activities, they allow for innovation and experimentation.



❹ MisFITs: the overflow and crisis of French PV

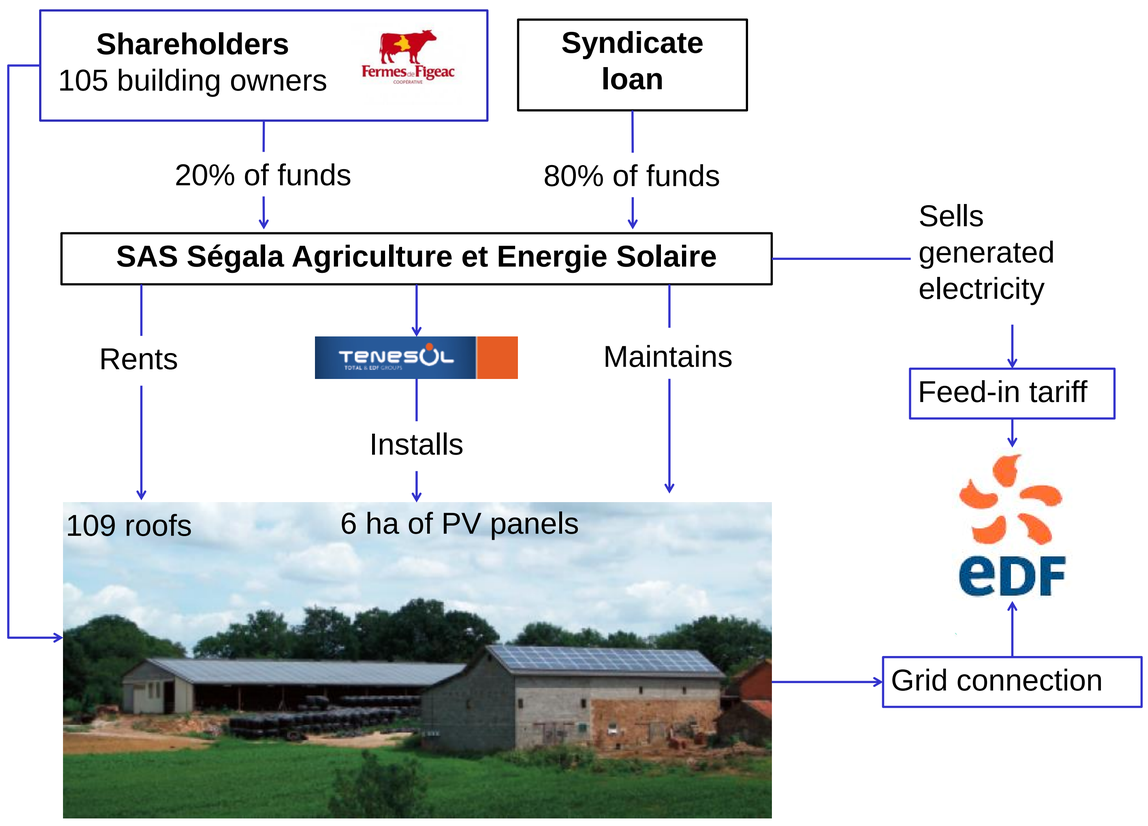
2002: first FITs for PV in France
2006: reform and increase of FITs for PV. Polyvalent and unbridled system.
2008-2009: dramatic decrease in PV module costs, uncontrolled expansion of French PV market
2010: attempts at ad-hoc regulation by refining FIT scheme
2010-2011: moratorium on FITs for PV and organisation of a *concertation*
2011: self-adjusting FITs, cap on market development



- The **uncontrolled expansion** of the PV market in 2008-2010 turned into a **political crisis** when the government decided on a moratorium and consultation.
- During the consultation, actors of the PV sector emerged as a **concerned public** (Marres, 2007).
- The consultation **failed to provide a reliable representation** of the « French PV sector.
- Thre outcome was a reform of FITs that **closed down** both the space for market development and for politicat action.

❺ BeneFITs: the *Fermes de Figeac* project

A territorial innovation articulated around the FIT opportunity



- FITs for PV are seized as a **financial and political resource**.
- Through a business models articulated around FITs *and* a commitment to mutualisation and territorial innovation, FITs and PV are **turned into instruments for territorial developmen**t.
- Mutualisation and local implantation are turned into **means to maximise the benefits** from FITs and PV.
- The success of this project is an example of the **possibilities offered by FITs**.
- To benefit from these possibilities, actors have to **conform to the financial framing provided by FITs**: the capacity to transform FITs depends on the capacity to conform to them.

❻ References

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