

Agrovoltaics in France: legal framework and first conclusions

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MINISTÈRE
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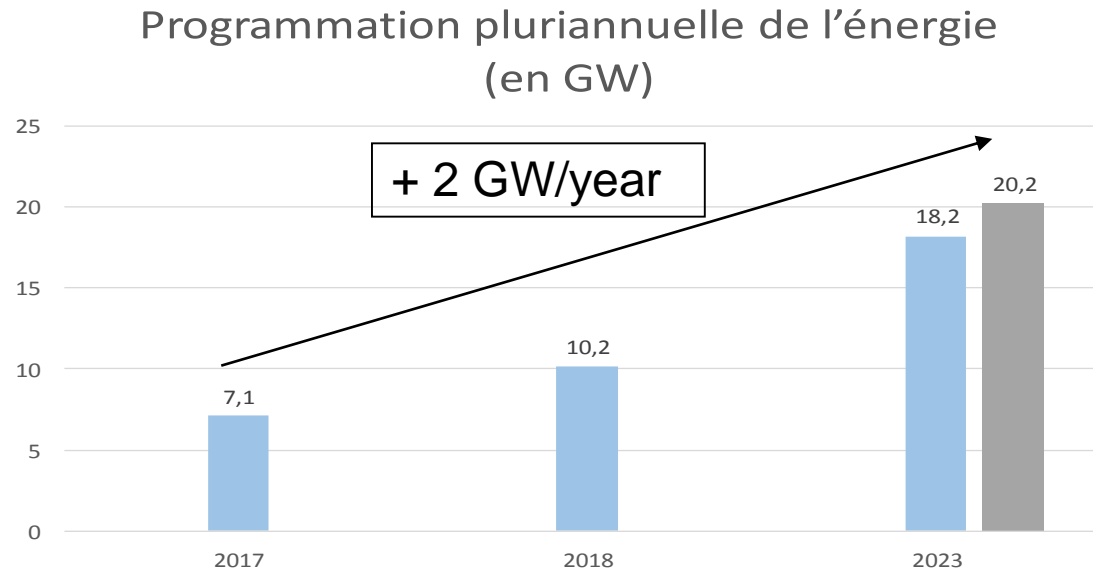
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Solar PV: legal framework

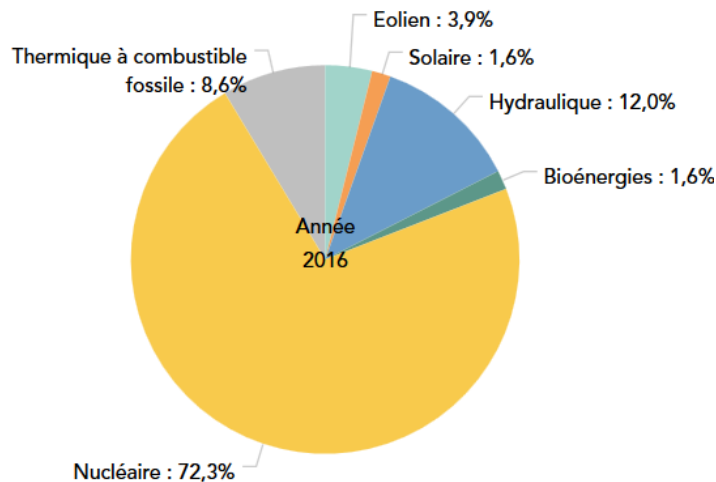


Solar PV in French electricity mix

- Solar PV development objectives set by the PPE at different horizons:



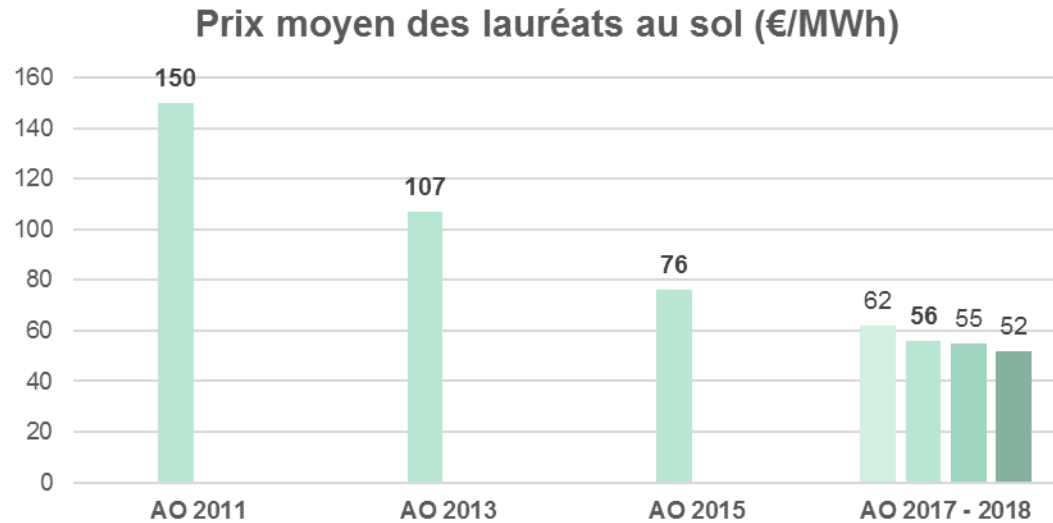
- Electricity production in 2016:



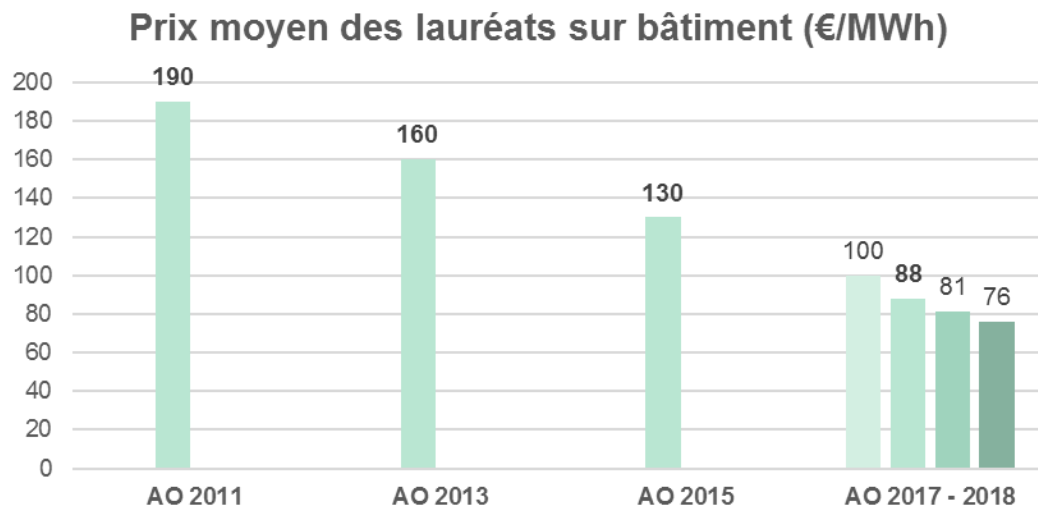
Solar PV might account for about 5% of national electricity production by 2023.

Solar PV: more and more competitive

- Price divided by 3 for ground-mounted installations since first tender in 2011:



- Strong price decrease also for rooftop PV:



Solar PV: support mechanism



Support mechanism design

Support mechanism			
	Rooftop installations	Ground-mounted plants	Self-consumption
0 – 100 kWc	Open tariff FIT		Open tariff FIT + premium
100 – 500 kWc	Tender (450 MW/y) FIT		Tender (150 MW/y) FIP
500 kWc – 8 MWc	FIP	Tender (1000 MW/y)	
8 – 30 MWc		FIP	

Since One Planet Summit:

- 750 MW/year for rooftop tenders.
- 1700 MW/year for ground tenders.

Eligibility criteria

- **Rooftop installations:** no competition with other usage
- **Ground-mounted plants** must comply with implantation conditions to limit environmental impacts and preserve rural, agricultural, pastoral and wooded areas:

1st case: field registered as « urbanized » or « to urbanize ».

2nd case: field registered in a natural zone where renewable energies can be developed.

3rd case (environmental bonus): degraded land (landfills, industrial brownfield, polluted area, etc.)

Innovation tender

- **A pluriannual tender for innovating solar plants, launched in march 2017 with 4 different auctions:**
 - Auction 1: Innovation concerning « Components and integration »
 - Auction 2: Innovation concerning the electric system
 - Auction 3: Innovation concerning plant optimization
 - **Auction 4: Agrovoltaic**
- **Agrovoltaic: System allowing for a main agricultural production along with a secondary photovoltaic production**
- **Project ranking not only depending on price (55%) but also on innovation quality (45%).**
- Evaluation of innovation by ADEME.
- **70 MW once a year:**
 - Auction 1: 25 MW
 - Auction 2: 10 MW
 - Auction 3: 20 MW
 - Auction 4: 15 MW

Projects ranking

Criteria		Maximum score
Price		55
Innovation	Level of innovation	10
	Synergy with agricultural use	10
	Market positioning	10
	Technical quality	5
	Industrial ambitions	5
	Environmental and social aspects	5
TOTAL		100

Sufficient level of innovation and synergy with agricultural use: minimum of 8 points to remain eligible.

Synergy with agricultural use

- **Agrovoltaic projects are evaluated according to a technical report on synergy with agricultural use.**
- **Technical report must be endorsed by an agricultural expert such as the local *Chambre d'Agriculture* (agricultural body).**
- **Each project has to:**
 - insure a long-term agricultural production ;
 - present a « witness zone » without panel to allow production comparison ;
 - justify and prove the « light sharing » between crops and panels.
- **Any project not compliant with the above rules is eliminated.**

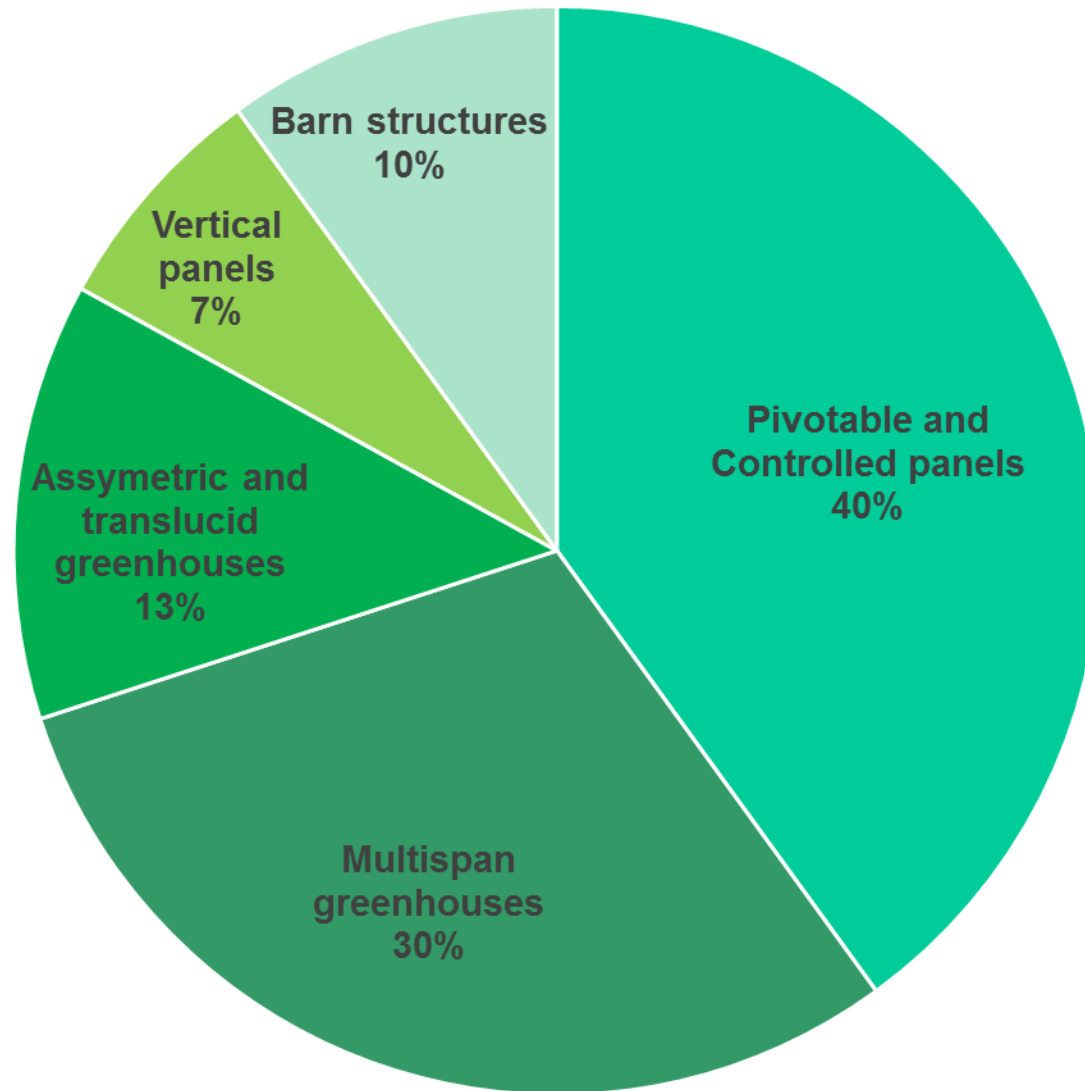
Feedbacks from first round



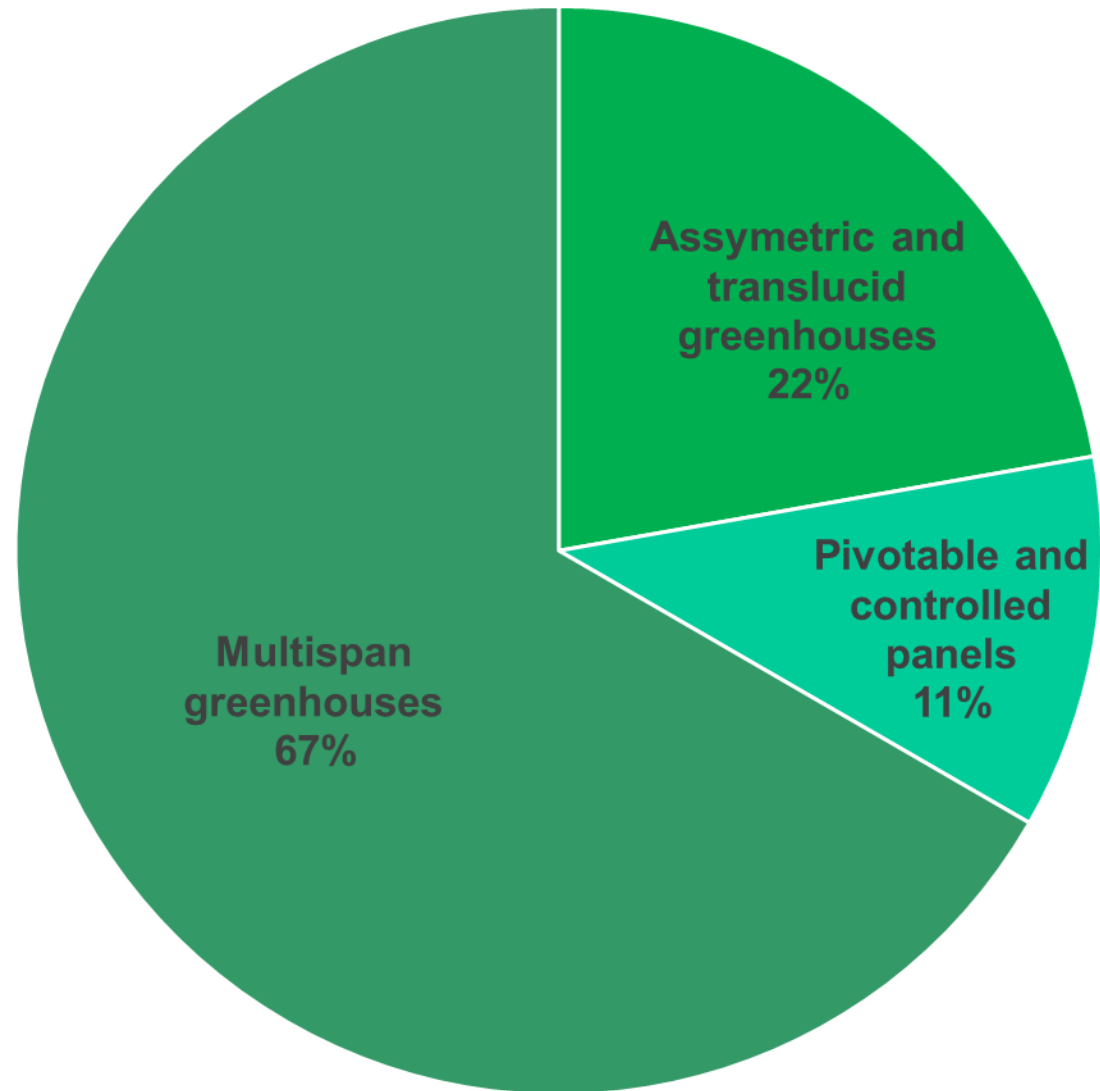
A competitive first round

	Proposed projects (MW)	Selected projects (MW)	Mean price (€/MWh)
Auction 1: Components and integration	84	25	90
Auction 2: Electric system	15	10	98,5
Auction 3: Plant optimization	112	20	69,5
Auction 4: Agrovoltaic	57	15	86,5
TOTAL	268	70	80,7

Zoom on agrovoltaic projects proposed



Zoom on agrovoltaic projects selected



Next rounds



Next rounds still discussed with DG Competition

- **2 auctions instead of 4** (increasing level of competition):
 - **Auction 1:** Innovation on ground-mounted PV installations
 - **Auction 2:** Innovation on rooftop PV installations, including agrovoltaic projects
- **A minimum level of innovation and synergy with agricultural use of 12 points to remain eligible.**
- **Expected next rounds:**
 - **2nd round: January 2019**
 - **3rd round: September 2019**
- **No crowdfunding bonus.**

Thanks for your attention

