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ROOFTOP PV IN FRANCE – REGULATORY FRAMEWORK AND DEVELOPMENT

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CURRENT SUPPORT SCHEMES IN METROPOLITAN FRANCE

INSTALLED CAPACITY	TYPE OF CONTRACT	ALLOCATION	ELIGIBLE INSTALLATIONS
≥ 500 kwC	Feed-in tariff contract (20 years)	Open-ended support	Buildings, farm hangars, farm greenhouses, shelters
< 500 kWc	Feed-in premium contract (20 years)	Calls for tender	

OPEN-ENDED SUPPORT

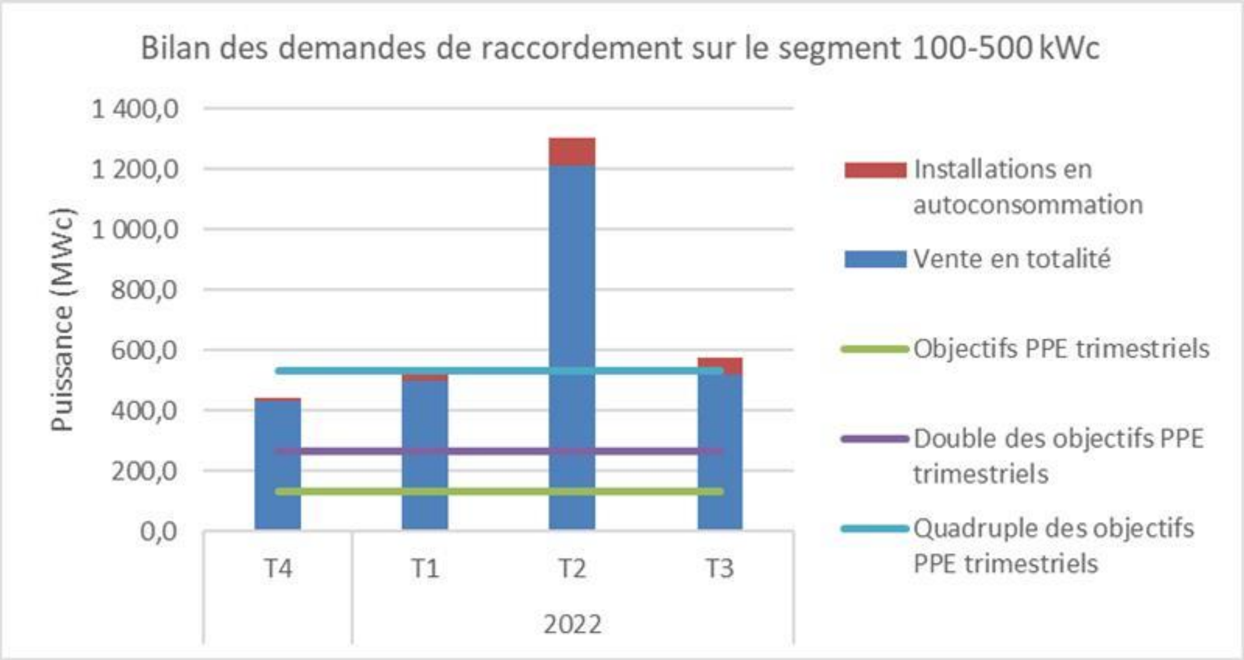
- [0 ; 100 kWc]: 2 ways to value the generated electricity:
  - Full supply: feed-in tariff for all the generated electricity (€/MWh).
  - Surplus supply: feed-in tariff for the injected surplus (€/MWh) + investment premium (€/kWc).
-]100 ; 500 kWc[: can openly benefit from a feed-in tariff for all the generated electricity (€/MWh) since end of 2021 (a specific tender was organised before).
- The tariffs are quarterly redefined (based on inflation and "degressivity").

CALLS FOR TENDER

- A new set of tendering procedures ("PPE2") was launched at the end of 2021.
- There is a specific call for tender for rooftop PV installations. These installations can also participate in the annual "neutral" call for tender.
- 4 periods/year (300-400 MWc targeted per period). 14 PPE2 periods are foreseen (the 4th period will be organised at the beginning of 2023).

FOCUS ON THE 100-500 KWC SEGMENT

→ The current regulatory framework is only 1-year old (installations could previously participate in tenders). One way to follow the development of rooftop PV installations through this scheme is to look at the number of contract/grid access requests.



→ Yet, this metric is very imperfect as producers can make new requests each quarter if tariffs are rising, without having any real economic incentive.

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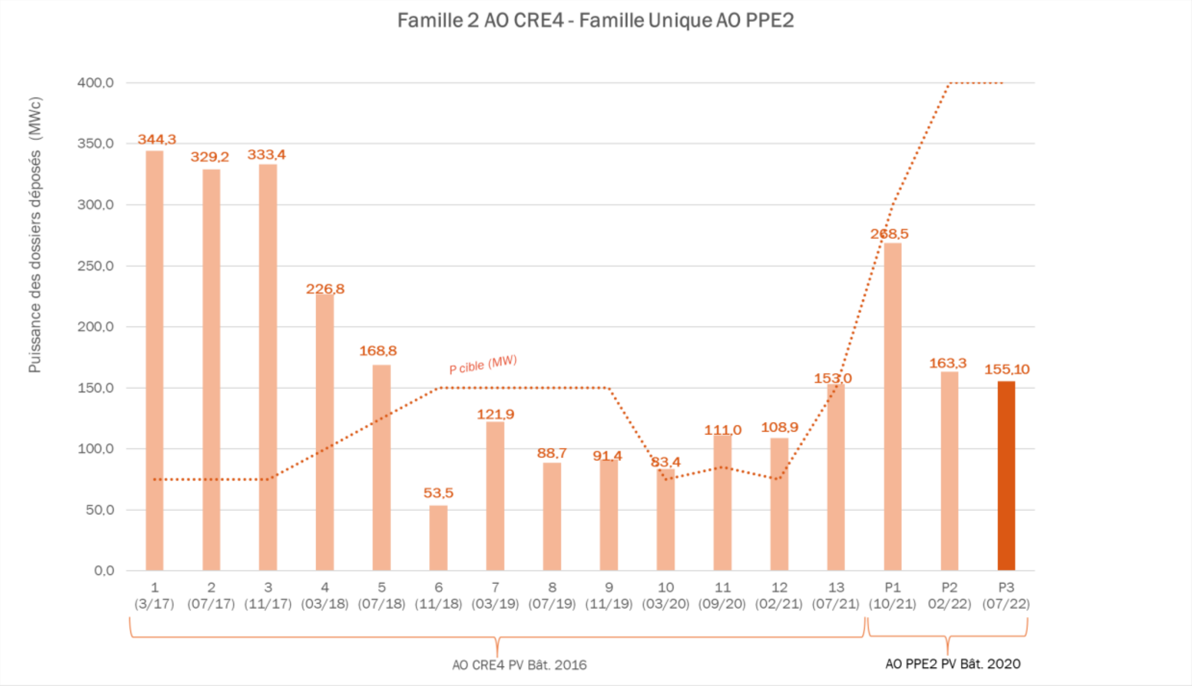
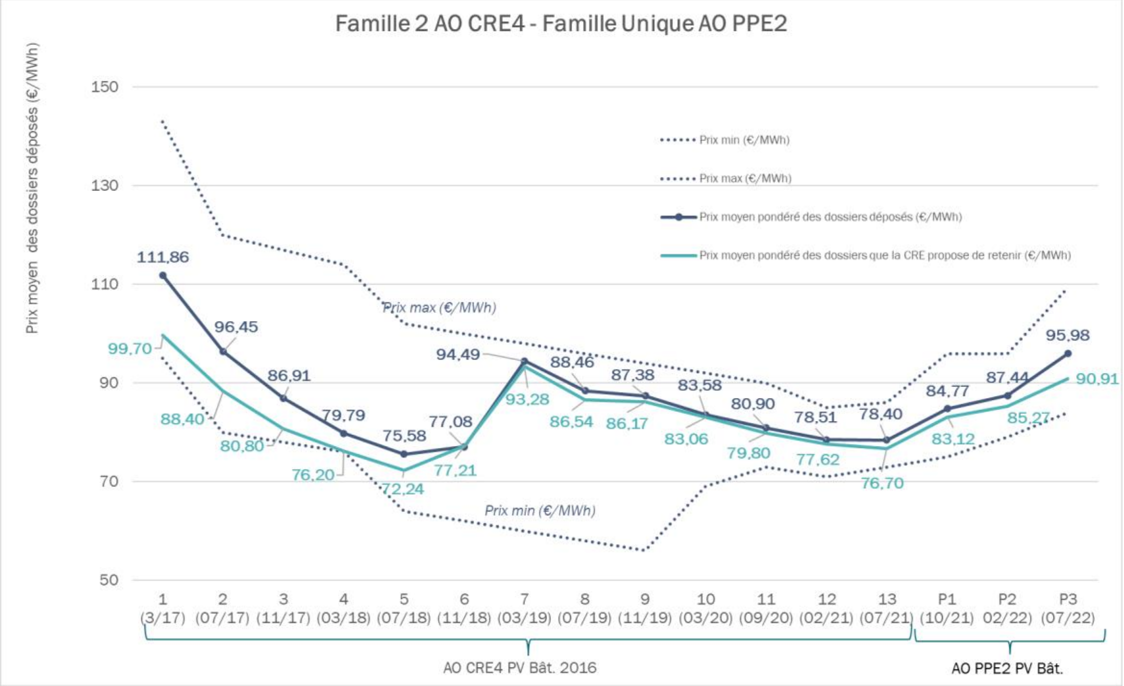
FOCUS ON THE > 500 KWC SEGMENT

LAST CALLS FOR TENDERS' RESULTS

Tendering procedure	Proposed capacity (MWc)	Called capacity (MWc)	Selected capacity (MWc)	Weighted average price for selected installations	Results' publication
Rooftop PV – 3d period	155,10	400,00	89,82	90,91 €/MWh	September 2022





CURRENT STATE OF PV DEVELOPMENT IN FRANCE

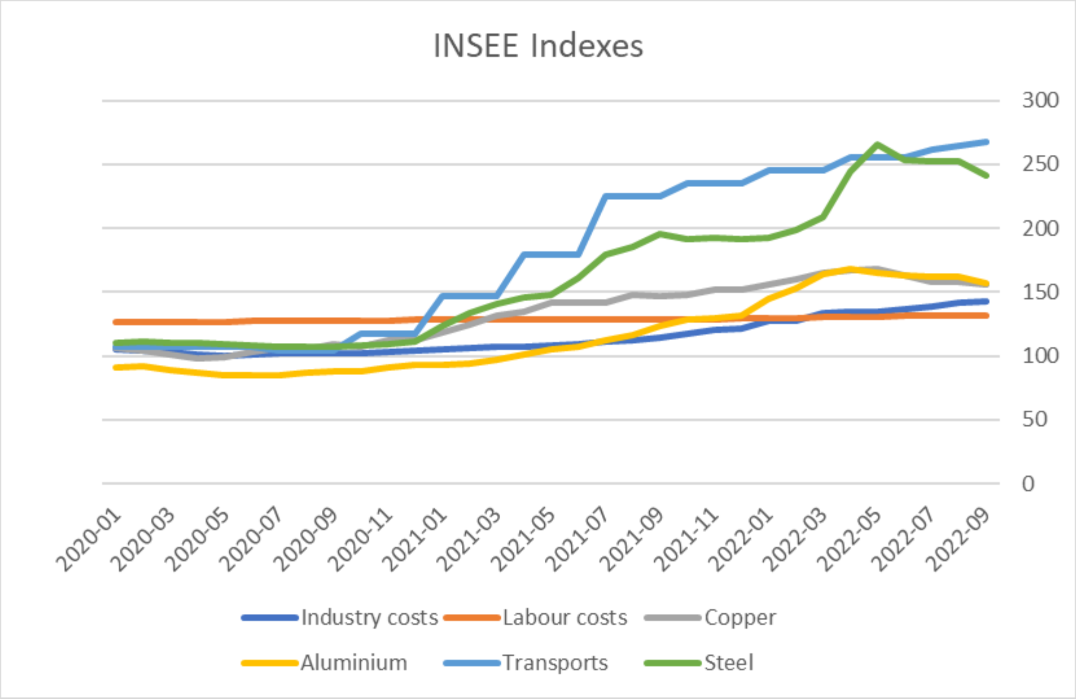
	Multi-year energy program target for 2023	Multi-year energy program target for 2028	End of Q3 2022
Rooftop PV	11,6 GW	20,6-25 GW	**15,8 GW**
Ground-mounted PV	8,5 GW	14,5-19 GW	
Total	**20,1 GW**	**35,1-44 GW**	

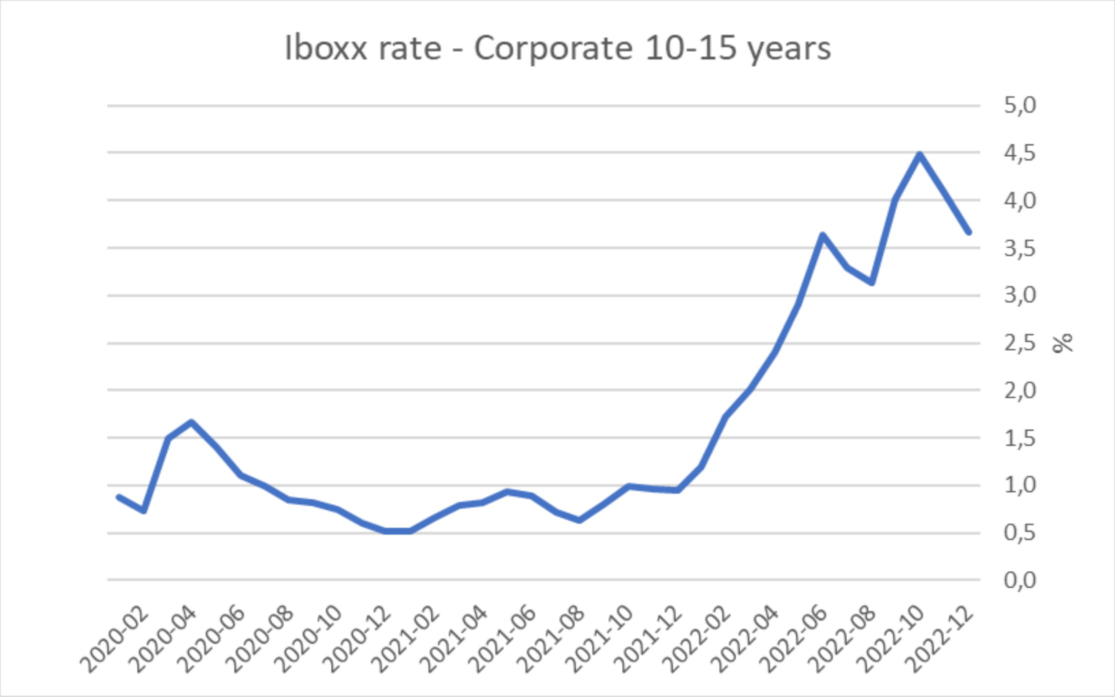
→ During the 3 first quarters of 2022, 1,7 GW were connected to the grid vs. 2,2 GW during the same period in 2021.

→ 52% of these 1,7 GW correspond to > 250 kWc installations (rooftop + ground-mounted).

EVOLUTION OF COSTS AND FINANCING CONDITIONS SINCE 2020

The global economic recovery after the Covid-19 crisis and the Russian invasion of Ukraine have led to changes in RES costs' tendencies. For PV, the bearish momentum is over and costs are rising because of several reasons: increase in raw materials' and transports' costs, logistic difficulties, increase in interest rates.





SEVERAL « EMERGENCY MEASURES » SINCE SUMMER 2022

PUBLICATION OF A NEW MINISTERIAL ORDER FOR ≤ 500 kWc INSTALLATIONS (28.07.2022)

- Automatic quarterly decrease of tariffs (“degressivity”) has been frozen in the current context.
- Tariffs have been increased thanks to a retroactive change in the quarterly indexation reference.
- Possibility under certain circumstances to choose retroactively the quarterly tariff.

Trimestre concerné		N=2 *Avant modification de l'arrêté S21 (c€/kWh)*	**N=2 Après modification de l'arrêté S21 (c€/kWh)**	N=3 *Avant modification de l'arrêté S21 (c€/kWh)*	**N=3 Après modification de l'arrêté S21 (c€/kWh)**
Dates		*01/05/22 31/07/22*	**01/05/22 31/07/22**	*01/08/22 31/10/22*	**01/08/22 31/10/22**
T_a = 17,89	0 <P + Q ≤ 3	*18,14*	**19,51**	*16,49*	**20,22**
	3 < P + Q ≤ 9	*15,42*	**16,58**	*14,02*	**17,18**
T_b = 9,47	9 <P + Q ≤ 36	*11,15*	**11,87**	*11,39*	**12,31**
	36 < P + Q ≤ 100	*9,69*	**10,33**	*9,91*	**10,70**
T_c = 9,8	100 <P + Q ≤ 500	*10,03*	**10,68**	*10,25*	**11,07**
P_a = 0,38	0 <P + Q ≤ 3	*0,39*	**0,41**	*0,35*	**0,43**
	3 < P + Q ≤ 9	*0,29*	**0,31**	*0,26*	**0,32**
P_b = 0,08	9 <P + Q ≤ 36	*0,16*	**0,17**	*0,17*	**0,18**
	36 < P + Q ≤ 100	*0,08*	**0,09**	*0,08*	**0,09**

POSSIBILITY FOR FORMER WINNERS OF BIDDING PROCESSES TO SELL THE ELECTRICITY ON THE MARKETs DURING SEVERAL MONTHS BEFORE THE SUPPORT CONTRACT TAKES EFFECT (30.08.2022)

- Possibility for former winning installations commissioned between [01.09.2022 ; 31.12.2024] to sell the electricity on the market until the deadline for commissioning (24-30 months).
- Deadline for commissioning is extended by 18 months.
- Installed capacity can be uplifted by 140%.

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MAJOR EVOLUTIONS IN SUPPORT SCHEMES

IMPLEMENTATION OF INDEXATION FORMULAS BEFORE THE COMMISSIONNING DATE

- The new rooftop PV bidding process' specifications include a new indexation process and formula to cover the risks of strong evolutions of CAPEX/OPEX and interest rates' levels between the call for tender and the financial closing. The formula has been the subject of many discussions between the ministry services, the French regulator and the PV industry.
- A new ministerial order should be published in the coming weeks and should also introduce a new indexation formula.

OTHER IMPORTANT EVOLUTIONS IN THE NEW SPECIFICATIONS OF THE 4TH PERIOD OF ROOFTOP PV CALL FOR TENDER

- Price caps have been made confidential.
- « Agrivoltaïc shelters » are now eligible to the rooftop PV call for tender (they were previously only participating in the « Innovative PV » call for tender).

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LAND POTENTIAL DIFFICULTIES – LEGAL MEASURES SINCE 2019

→ The **2019 "energy and climate" law** imposes that every new building (specific uses defined in the law) of more than 1000m2 must cover at least 30% of its surface with solar panels or vegetations.

→ The **2021 "climate and resilience" law** complements the 2019 law:

- From 01.01.2023: obligation for all new commercial/industrial/artisanal/warehouse buildings of more than 500m2 and all offices' buildings of more than 1000m2 to cover at least 30% of their surface with solar panels or vegetations.
- From 01.01.2024: obligation for all new parking areas of more than 500m2 to cover at least 50% of their surface with solar panels or vegetations and 100% of the parking shelters.

Such obligations are also applicable to existing buildings/parking areas when strong renovation works are undertaken.

→ The **law to accelerate the development of RES that is currently under discussion** also strengthen these obligations. The current text provides (with amendments on this topic adopted at the end of last week) :

- An obligation for existing parking areas (>1500m2, 2500m2 in the 1st version of the text) to install parking shelters with solar panels on at least 50% of their surface.
- Penalties that can be applied and some exemptions to the legal regime.