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# Ground-mounted Solar PVs nearing end of subsidized offtakes in France and Germany

*Volumes & Perspectives*

— JUNE 2021

# 12 GW and 54 GW of subsidized capacity in France and Germany will be released on the market from 2025 as tariffs reach maturity

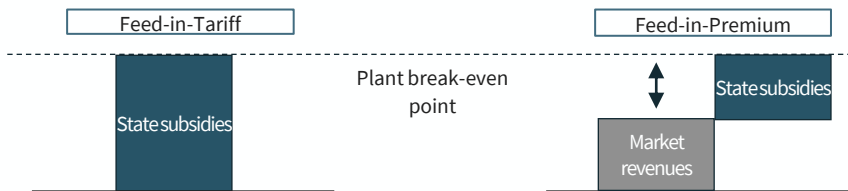
## Two major subsidy programs underpin the French power market

### Guichets ouverts – 20 years tariff

When plants meet the conditions of a specification, they can benefit from a guaranteed feed-in tariff

### Tender offers (from 500 kWc) – 20 years tariff

Feed-in-premiums gradually replace feed-in-tariffs since 2017, and are awarded under national public tenders regulated by the CRE



## Germany's Renewable Energy Sources Act – EEG

### Statutory fixed FiT– 20 years tariff

Fixed feed-in-tariffs can exceptionally be granted to small or older facilities. The operator does not bear any market risk as the price is set for the full contract duration. The producer does not have balancing responsibility (unlike for FiP)

### Tender offers (from 750 kWc) – 20 years tariff

Germany also provides feed-in-premiums whereby the plant operator sells its electricity to the market at market price while earning an additional compensation – eligible projects being determined through a tendering process



#### EEG 2021

100 GW by 2030

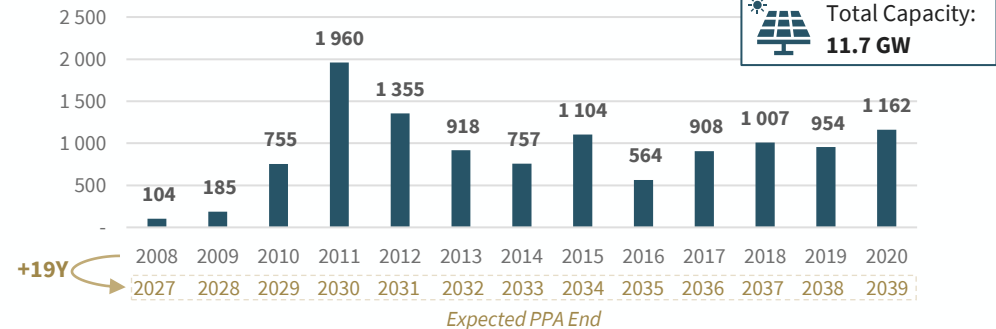


65% renewable mix by 2030



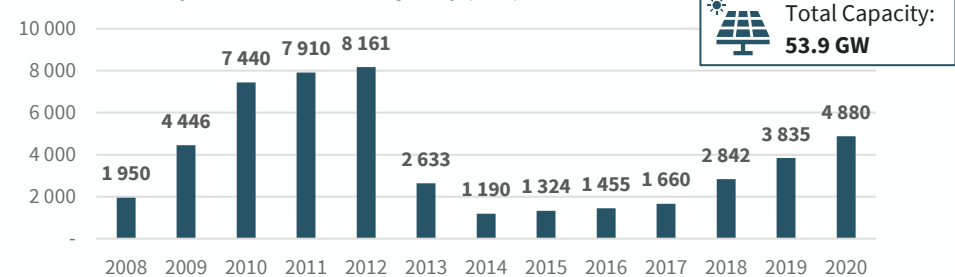
New tender category for solar rooftops > 500kWc

### France - Installed Solar Capacity (MW)



As France's solar market took off in the 2010s, subsidized capacity will gradually become marketable beyond 2025 as initial subsidized PPAs halt

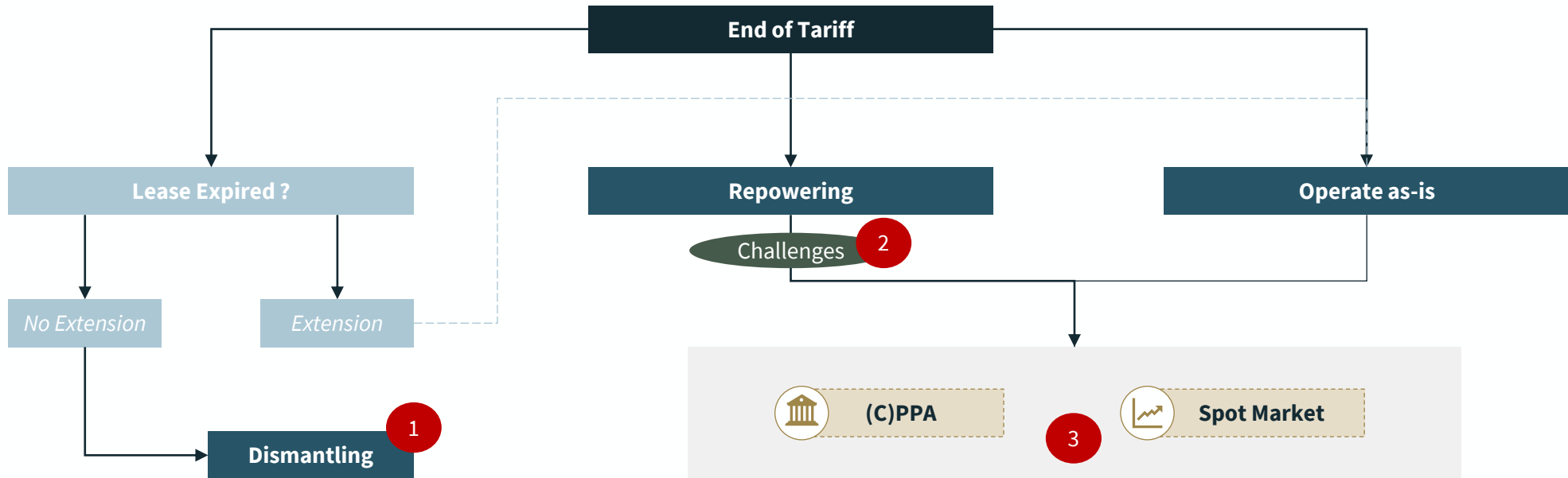
### Germany - Installed Solar Capacity (MW)



Germany's solar capacity growth diminished from 2013 amid new legislations before kickstarting in 2018, with initial tariffs discontinuing beyond 2025



# Power producers enjoy various options upon termination of the offtake contract, allowing to maximize projects' economic usefulness



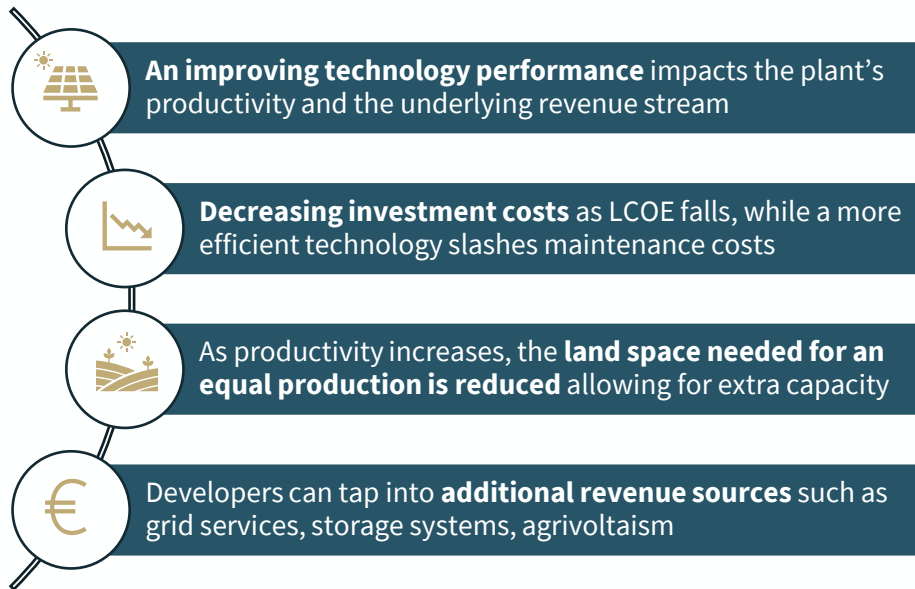
1 Some plants (volumes difficult to estimate) could be forced to **dismantle** and free the land from any occupation

2 **Repowering market** will increasingly develop (some plants have been repowered in their mid-life). **Challenges** exist around regulations and authorizations

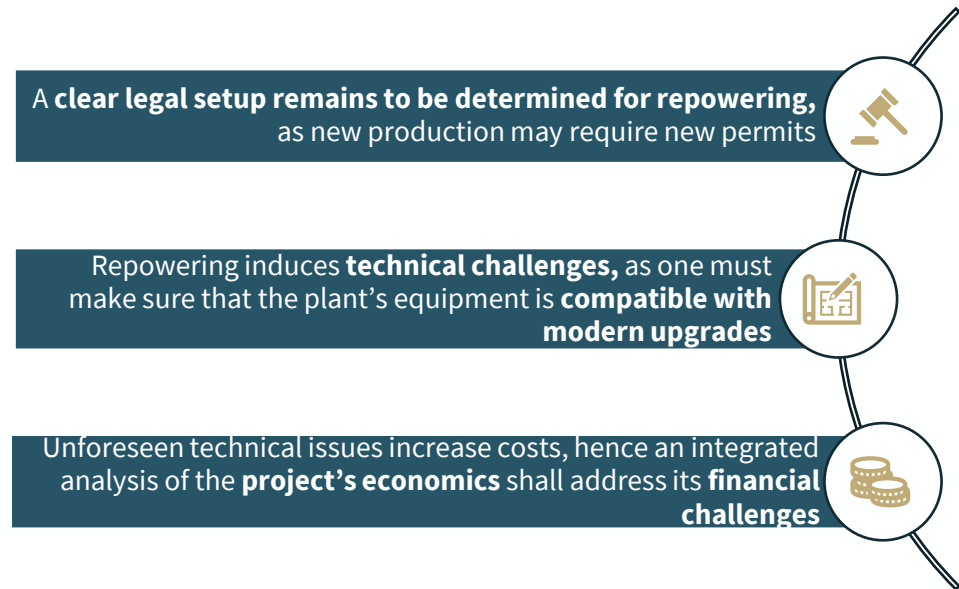
3 Once repowered (or not!), plants can either value their output on a **bilateral mid to long term PPA** or sell to the **spot market**

# As technologies mature, repowering plants brings evident upsides, yet economic, technical and regulatory challenges remain

## Repowering drivers

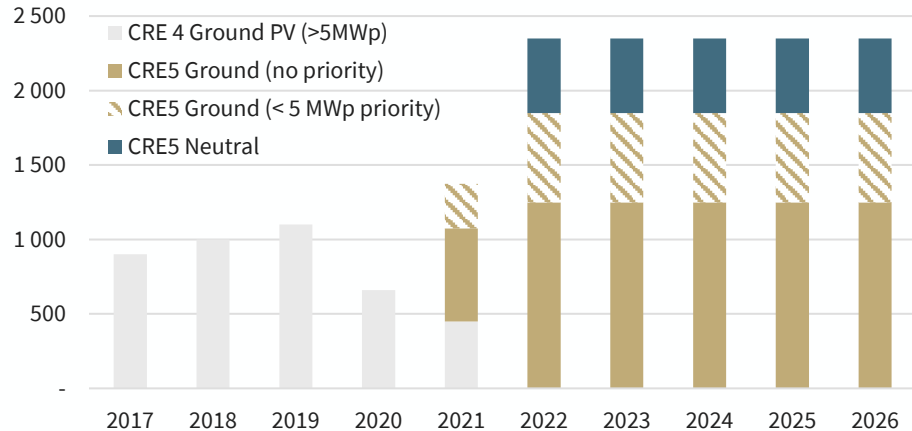


## Challenges

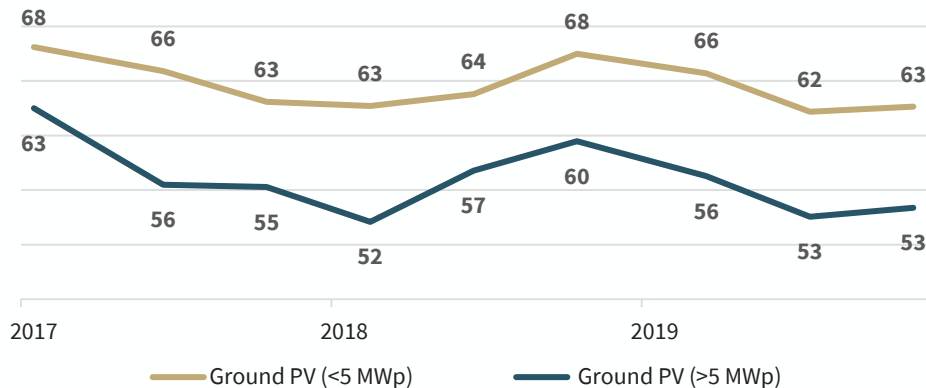


# French PPA market is still dominated by subsidies yet maturing technologies create room for the development of private offtakes

## CRE 5 process provides visibility on future ground solar PV capacities



## Ground PV Prices (€/MWh) are declining



## CPPA trends in France: a suitable structure burdened by regulations

### Government subsidies limit CPPA growth

Current power price subsidies do not provide off-takers with a strong enough incentive to enter CPPAs given their attractiveness

### A limited number of projects and off-takers

Transactions are currently based on factors other than an economic rationale. Most CCPAs have been contracted between large corporates keen on showcasing their green branding and top-tier IPPs with non eligible projects.

### A market structure suitable for CPPA development

The French market is deregulated with a wide range of intermediaries, allowing for interactions between private players. Subsidies falling, technology maturing, and auctions tightening shall boost the CPPAs competitiveness

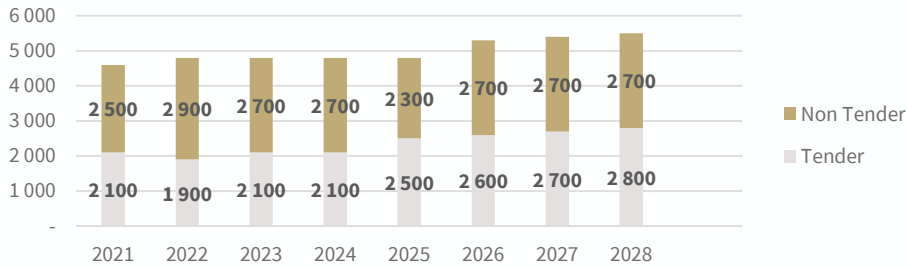
## The volume of CPPA transactions is surging

Date	Buyer	Producer	Capacity	Term (yrs)	Type
Feb. 2021	orange	ENGIE	51 MW	15	Greenfield
Mar. 2021	orange	TOTAL	80 MW	20	Greenfield
Jun. 2020	Auchan	voltalia	61 MW	20	Greenfield
Feb. 2020	GRUPE AOP	urbarolar GazelEnergie	40 MW	12	Greenfield
May 2020	Crédit Mutuel	voltalia	10 MW	25	Greenfield
Jun. 2019	SNCF	voltalia	143 MW	25	Greenfield



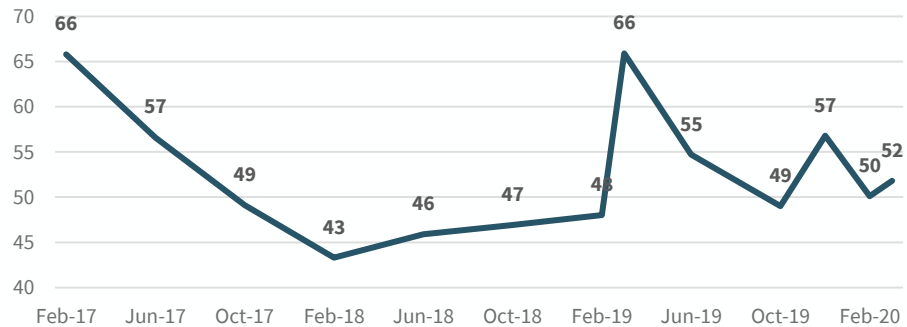
# Germany's decreasing PPA prices combined to an ambitious renewable mix could trigger the expansion of CPPAs

## Germany's solar capacity growth is ramping up (MW)

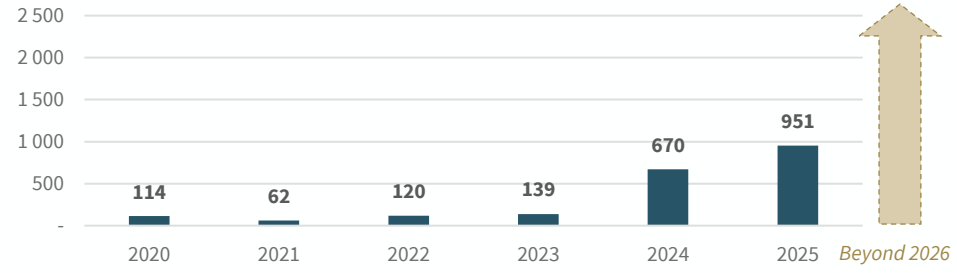


As Germany ramps up solar capacity development across the country, nearly 50% of additions will not be tendered, leaving room for CPPA expansion

## Germany's Solar PV tariffs (€/MWh) are falling



## Subsidized capacity is gradually released on the market (MW)



The volume of subsidized capacity released to the market is expected to grow significantly beyond 2026 as initial offtake contracts mature

## Increasing number of CCPA deals with established counterparts

Date	Buyer	Producer	Capacity	Term (yrs)	Type
Apr. 2021	VW	RWE	170 MW	10	Greenfield
Aug. 2020	BOSCH	RWE	50 MW	16	Greenfield
Aug. 2020	BOSCH	Statkraft	47 MW	12	Greenfield
Aug. 2020	BOSCH	VATTENFALL	10 MW	12	Greenfield
May 2020	ENGIE	EnergieKontor	42 MW	15	Greenfield
Feb. 2019	EnBW	EnergieKontor	52 MW	15	Greenfield

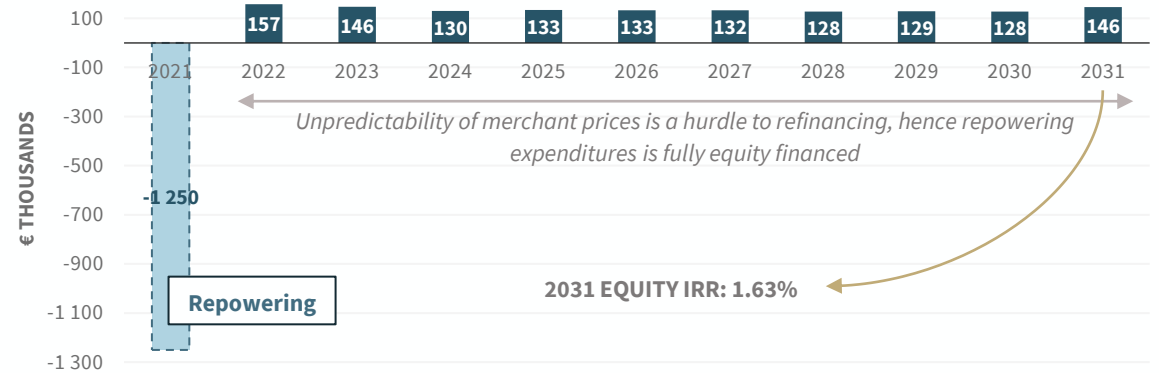


# Case Study - Return on investment profiles upon termination of subsidized tariffs and repowering: merchant prices vs refinanced CPPA-backed project

## Merchant option: Assumptions

Assumption	Value
Repowering Price	0.25€/Wp
Solar Farm Capacity	5.00 MWp
Merchant curve	Central PV Captured

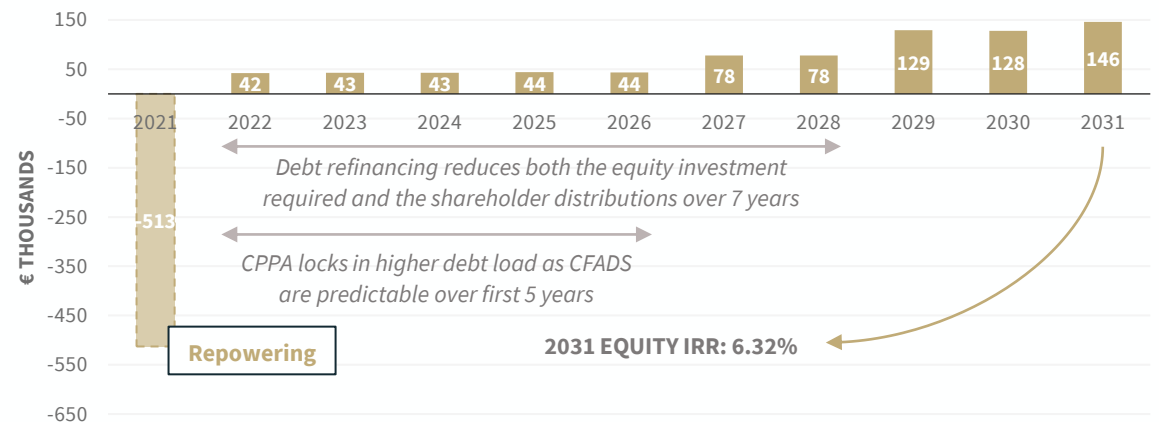
## Levered Free Cash Flows after repowering expenditures



## CPPA option: Assumptions

Assumption	Value
Repowering Price	0.25€/Wp
Solar Farm Capacity	5.00 MWp
CPPA price	48.00€/MWh
Indexation	2.00%
CPPA term	5 years
Merchant curve	Central PV Captured
Refinancing	
Tenor	7 years
DSCR - CPPA	1.20x
DSCR - post-CPPA	1.35x
Interest Rate	2.00%

## Levered Free Cash Flows accounting for repowering expenditures and refinancing





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