

# PPA Structures

PPA-Forum, Windenergietage,  
Potsdam 2019

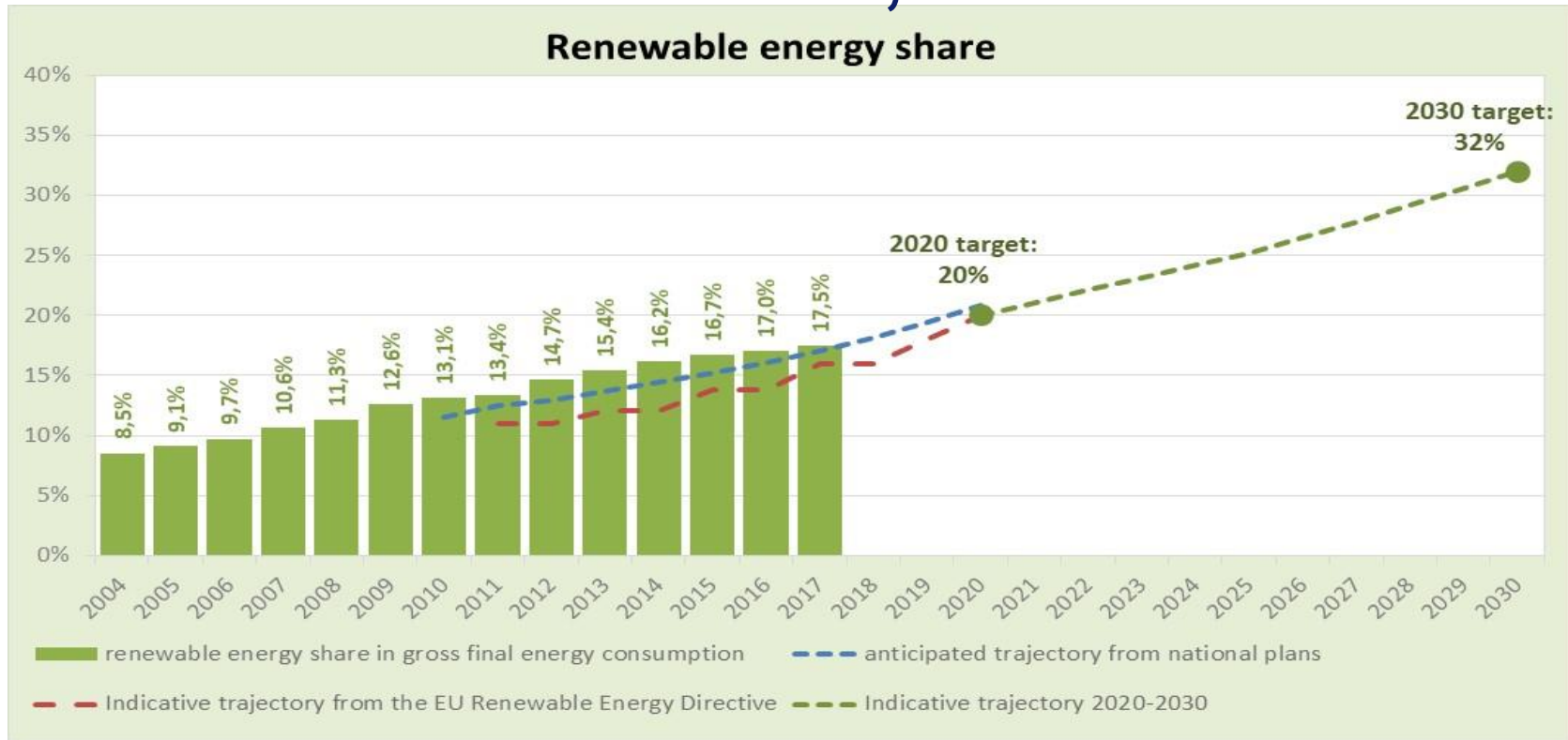
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# PPA structures

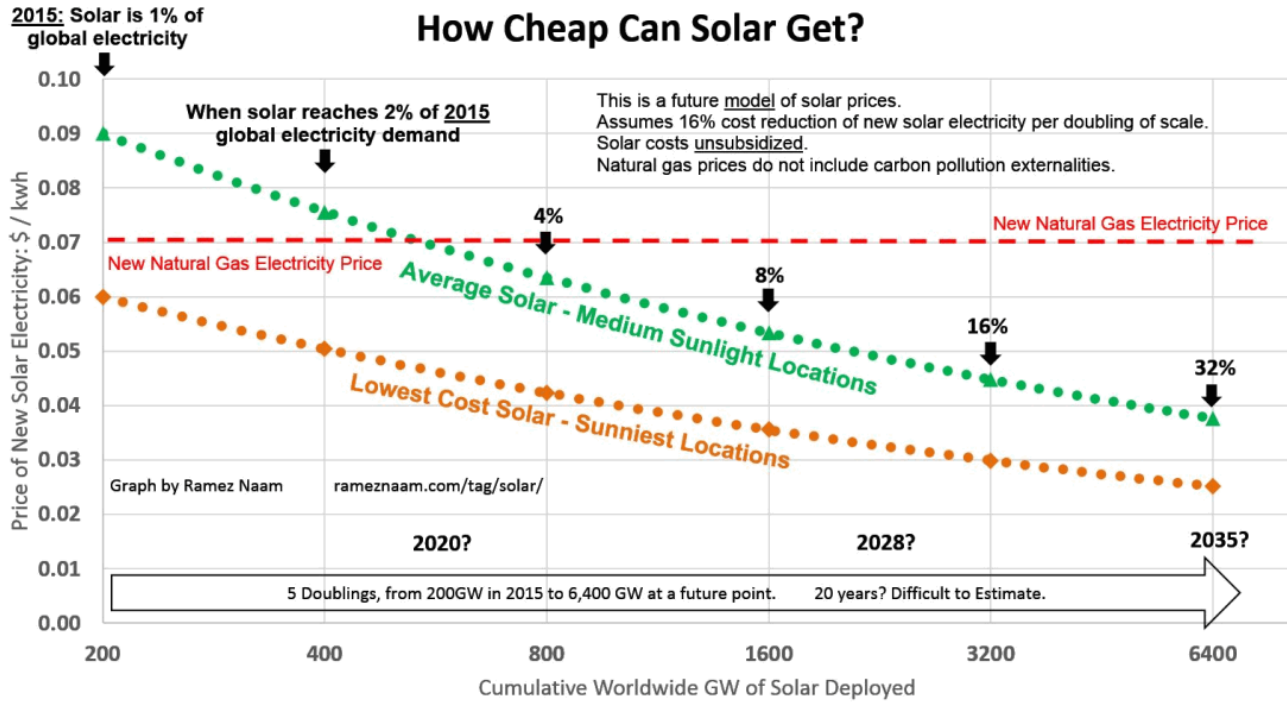
A Power Purchase Agreements purpose is to govern the allocation of risks associated with electricity prices.

The structure depends on how risks should allocated

# Trends in PPAs, +1500TWh

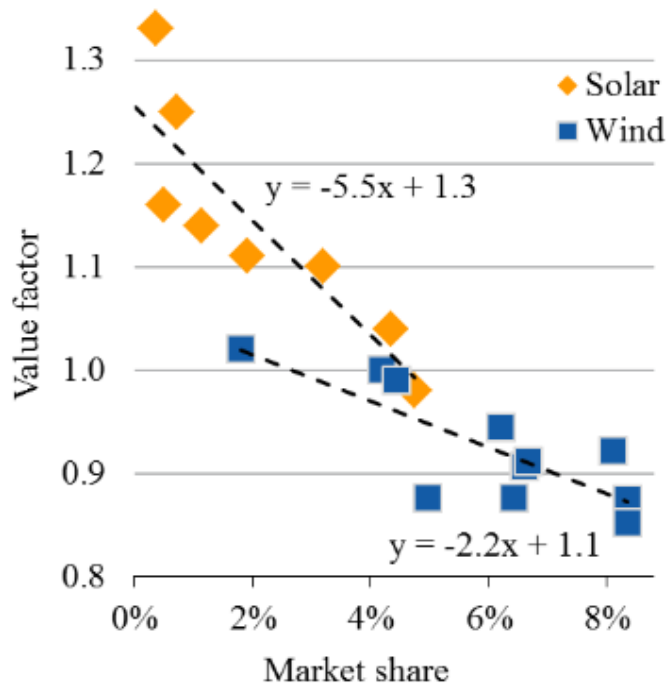


# Trends in PPAs, Cheaper Renewables



Source:energytransition.org

# Trends in PPAs, Cannibalization



Cannibalization depends on buildout rate.

Cannibalization will increase as long as growth in renewables outpaces growth in flexibility.

# Trends in PPAs, Reduced Subsidies



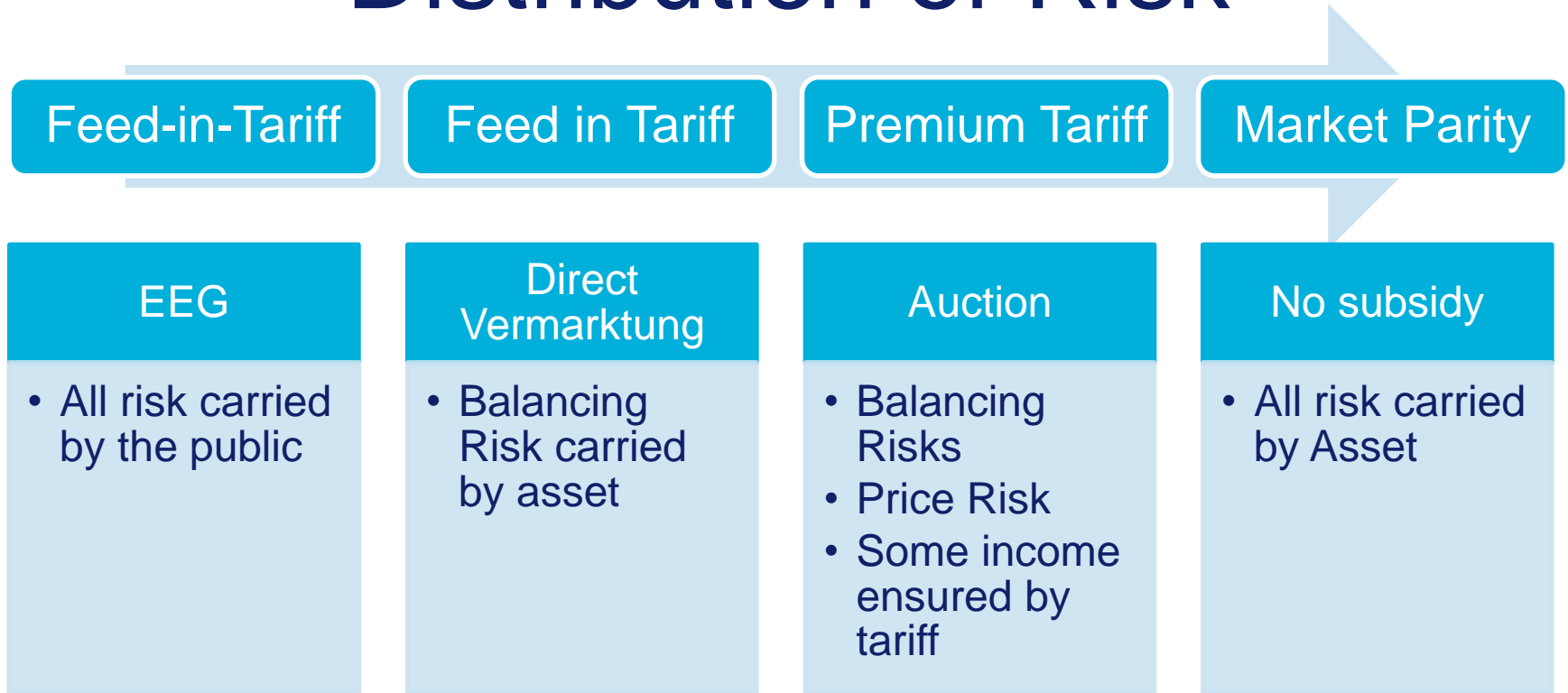
Feed-in-Tariff

Premium Tariff

Market Parity

- Risk is moving from public (taxpayers, consumers) to investors and traders
- This requires new products and risk tolerance for investors, energy traders and banks

# Distribution of Risk



# Duration is a challenge

Forward market liquid 3 - 5 years

Loan duration 10 - 20 years

= gap 5 - 17 years

Need for new solutions without Feed-in tariffs



# Typical PPAs

PPA/Risk	Investor	Energy Trader	Offtaker	Public
Direktvermarktung	None(wind resource)	Balancing Risk		Price Risk Cannibalization Risk
Pay as Produced	None(wind resource)	Balancing Risk Price Risk Cannibalization Risk		
Baseload	Cannibalization Risk	Balancing Risk Price Risk		
Corporate	Cannibalization Risk	Balancing Risk	Price Risk	