

# Chapter 1: Introduction and Overview



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# Introduction and Overview – 1/13

- While in the current arrangements generators receive capacity payments based on their availability, in the new arrangements they receive capacity payments on the basis of auction results, which give participants awarded capacity. Essentially, the market pays the generators for capacity and the cost of that is recovered from suppliers.
- In the energy market, the generators are paid for their generation at the energy price, and likewise suppliers pay for their consumption. Apart from an auction being used, the Capacity Market and Energy Market cash flows more or less match how the market works today.
- A new feature that comes with this capacity market is that there is a strike price associated with the awarded capacity. If the energy price is above the strike price then generators will earn that high price in the energy market if they generate. Those holding awarded capacity will have to pay back the difference between the energy price and the strike price to the market. Depending on the energy market price to which this happens, this payment may need to be done only if the generator has traded in that energy market, or the payment would have to be made irrespective of whether they actually generate in that period. This gives the generators with awarded capacity an incentive to be generating in the market when prices are high.

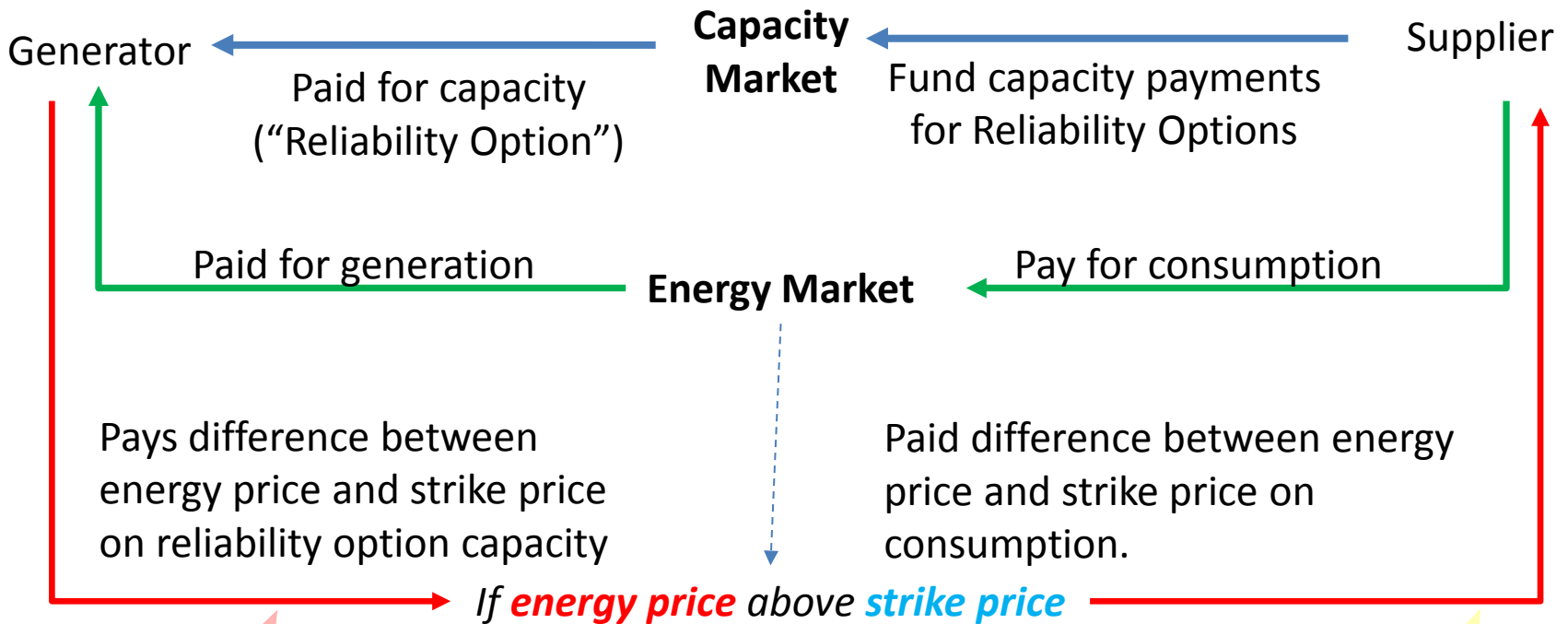
## Introduction and Overview – 2/13

- The money collected by the market when energy market prices exceed the strike price is paid back to suppliers who get the difference between the energy price and the strike price on their consumption. In this way, the suppliers are effectively hedged and do not have to pay more than the strike price in the energy markets, a source of benefit for funding the capacity in the first instance.
- The energy market prices could rise above the strike price due to the bids submitted by participants, or through another feature of the market called the administered scarcity price (ASP). This relates to when the market is running short of reserve capacity. Reserve capacity is generation held in reserve in case other generators breakdown or there are transmission failures etc.
- As reserves fall below the standard requirements, the ASP rises. If that becomes higher than the calculated energy price then it replaces the calculated energy price. This means that participants with awarded capacity could be very exposed if they are not generating.

## Introduction and Overview – 3/13

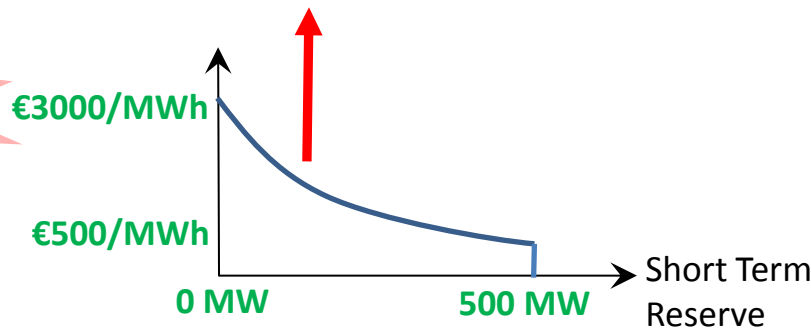
- There are protections for generators. One way they are protected is through “stop loss limits”. These are applied in settlement which limits the amount generators have to pay out in these difference charges over a billing period and over a year. Another protection is via secondary trading which allows a generator to trade out of its obligations to generate at times of high market prices.
- On the supplier side, suppliers are only hedged to the level of aggregate awarded capacity. For example if not all generators participate in the capacity market, the generators that don't participate keep the high energy price and therefore would not contribute to the cash flow used for difference payments to enact the hedge for suppliers. Also if generators are frequently protected by stop loss limits, there will not be sufficient funds to enact the hedge for suppliers. This is addressed by collecting additional amounts from suppliers, using this as part of a “socialisation fund”, to cover the shortfall.
- The following diagrams summarise these points, showing the flows between Suppliers and Generators in the Capacity and Energy Markets.

# Introduction and Overview – 4/13



Exposed if not generating

"Stop Loss Limits"  
"Secondary Trade"

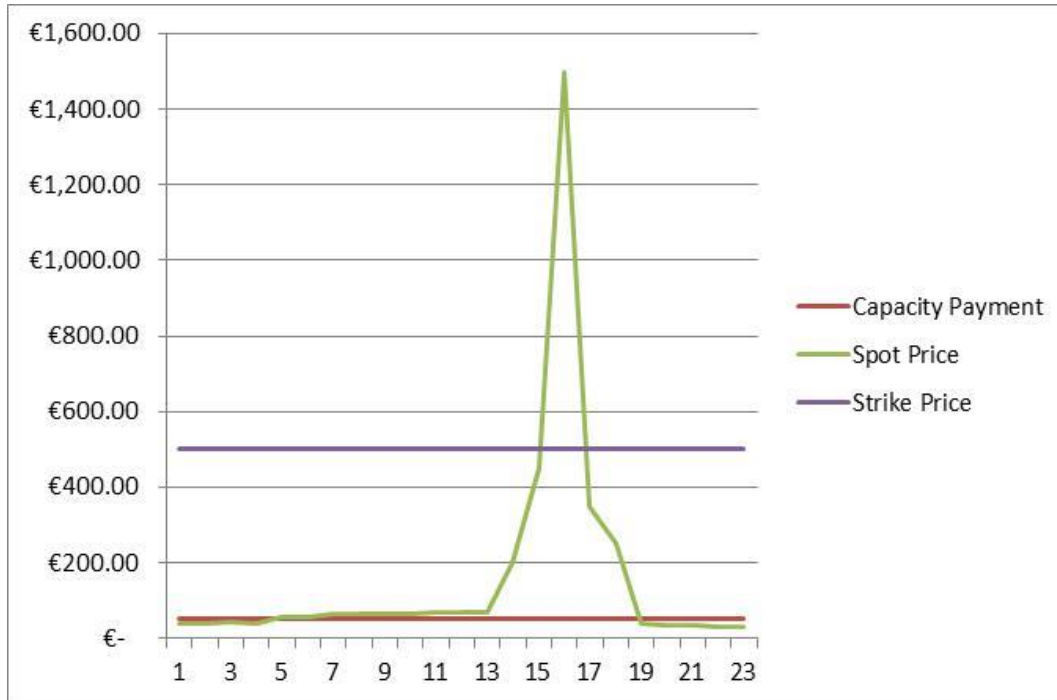


Administered Scarcity Price varies with reserve shortfall or goes to max price if demand control used.

Exposed if not enough ROs sold

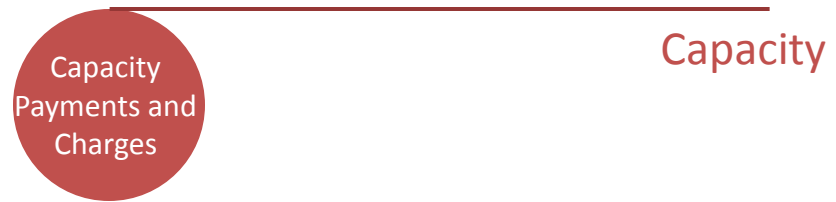
"Socialisation Fund"

# Introduction and Overview – 5/13



- 1 Generator gets option payment so does not need spikey prices to cover “missing money”.
- 2 Supplier funding of regular capacity payments hedges against spikey energy prices.
- 3 Generator pays back when spot price exceeds strike price. Strong incentive to be ON.

# Introduction and Overview – 6/13

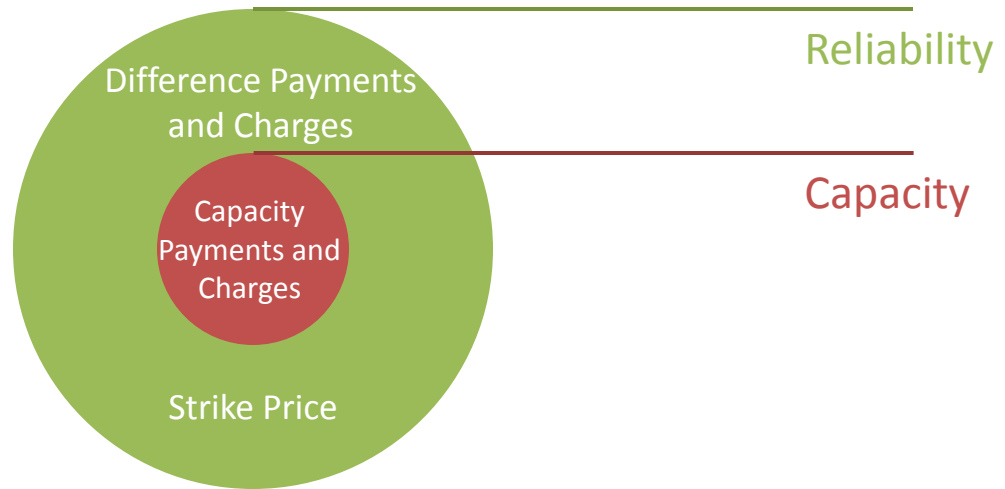




# Introduction and Overview – 7/13

- At its core the settlement of the capacity market is quite simple – it focusses on how Capacity Market Units are paid and charged, creating the incentives which enact the policy objectives around energy security. However various layers have been added in order to fine tune these incentives. We start with an overview of these layers, before each layer is discussed in more detail.
- The capacity market exists to ensure that Capacity Market Units get paid to help cover costs (for example, their Long Run Marginal Costs) which may not be covered in their energy market revenue (which is based on Short Run Marginal Cost principles, and due to the fact that price caps and floors apply in the energy markets). In this way the capacity market incentivises energy security – Capacity Market Units are paid to reliably ensure that the capacity is there when demand requires that they are called to generate. As the beneficiary of this increased security, Suppliers are charged to cover these Capacity Payments.

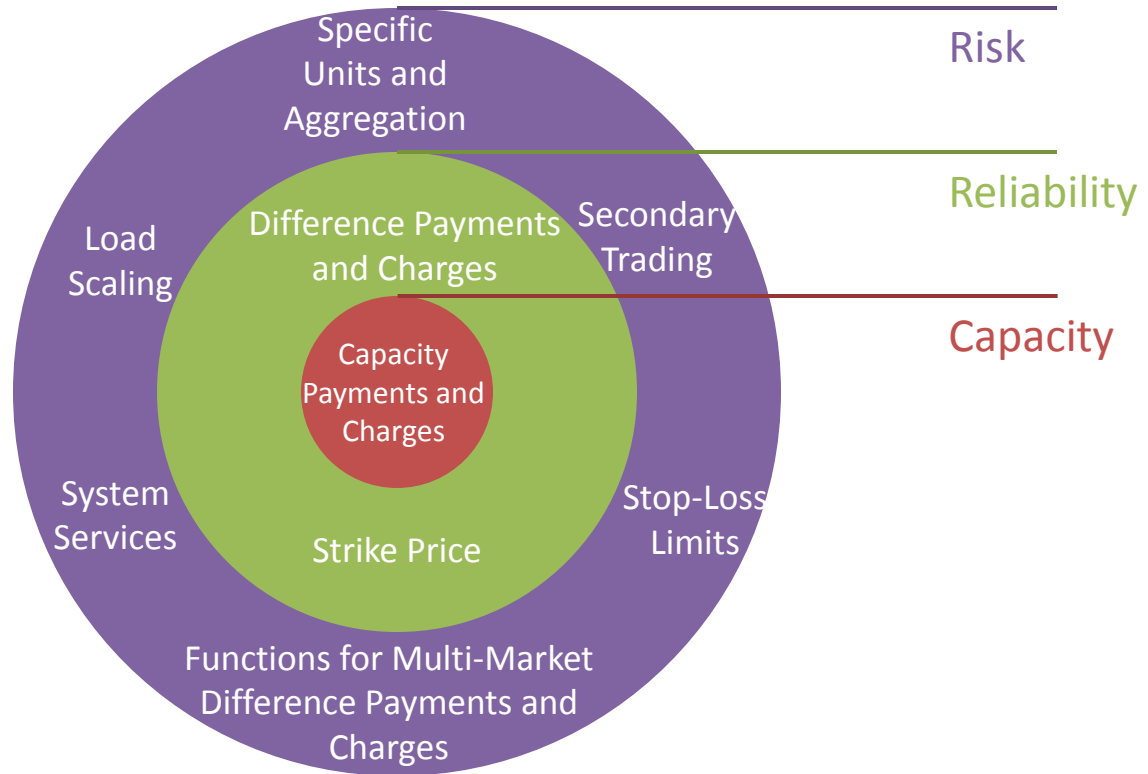
# Introduction and Overview – 8/13



## Introduction and Overview – 9/13

- In order to ensure this energy security is linked more to the physical reality of meeting demand in real-time and that reliability is incentivised, an obligation for Capacity Market Units to trade in the energy markets is incentivised through Difference Charges. These use information from Capacity Payments and from energy market trades as inputs to calculate charges which incentivise behaviour to reliably provide energy when it is most needed.
- These Difference Charges are used to fund the Suppliers who pay for this capacity in the form of Difference Payments. These payments act as a hedge in the energy markets, ensuring that consumers are not charged above the Strike Price.
- Difference Payments and Charges work in a similar way to a one-sided Contract for Difference: If a market price is above the Strike Price, Capacity Market Units must pay back the difference, while Suppliers must be paid the difference.
- All Capacity Payments and Charges, and Difference Payments and Charges, appear on the same settlement documents.

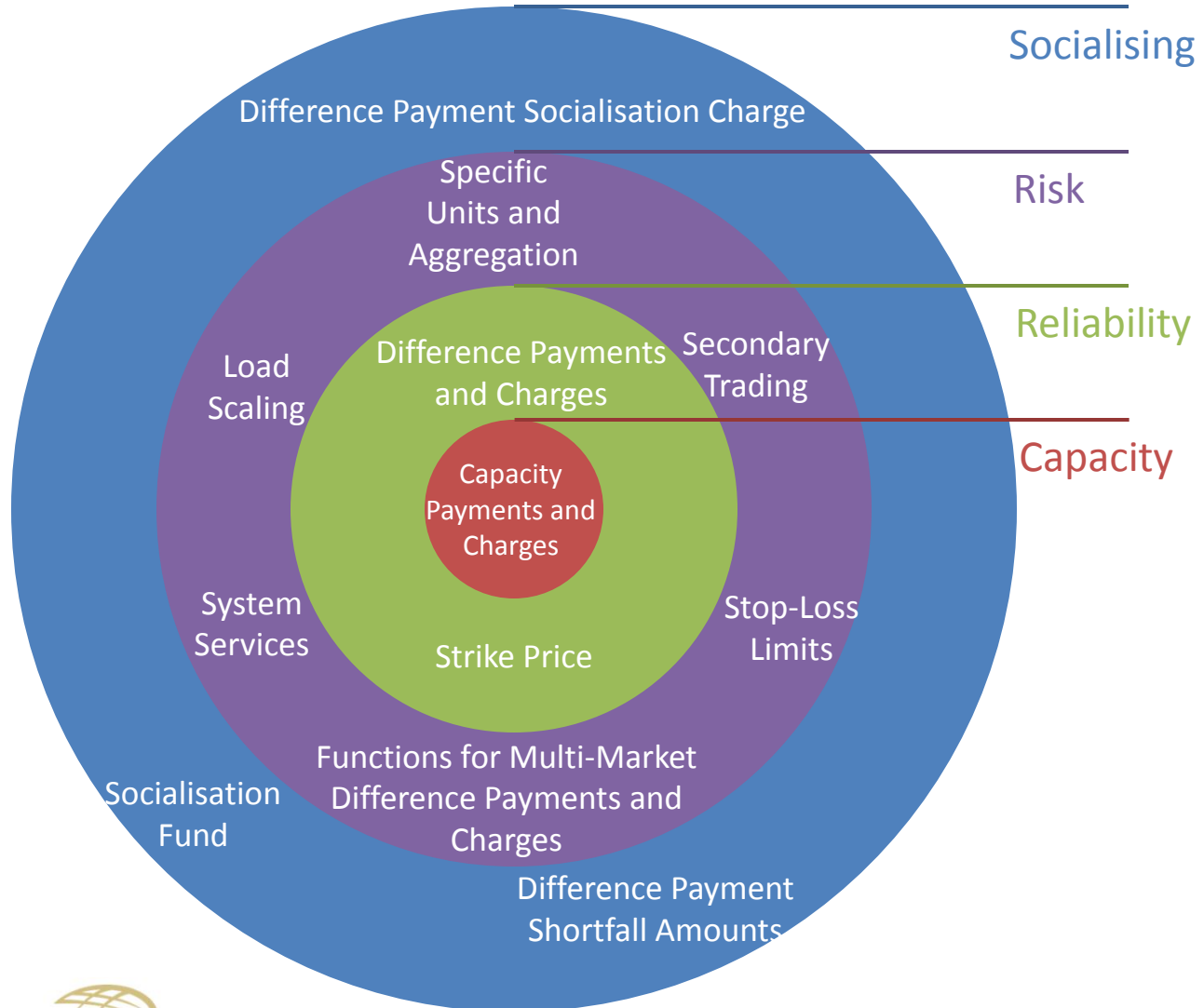
# Introduction and Overview – 10/13



# Introduction and Overview – 11/13

- This mechanism has risks associated with it. Therefore, another layer of complexity is added to reduce the potential for excessive exposure or losses, and gaming.
- These risks are twofold. For a Capacity Market Unit for example, there is the risk of potential losses if a CMU's Difference Charges out are more than their Capacity Payments coming in. To mitigate against this, there is the option of secondary trading, where if a participant is unable to provide the promised capacity in the energy markets it can trade out of its position so that it is no longer exposed to the charges. The obligation to provide energy is also load-scaled where a CMU is required to provide less of its capacity through the energy markets when demand is lower. Specific units, such as Demand Side Units and Interconnectors, are treated in a specific different way to ensure that they aren't overly exposed due to differences in how they operate. The provision of some system services are also counted towards meeting the obligation to provide capacity. There is also a Stop-Loss Limit related to how much a Capacity Market Unit can be charged for the elements of the incentive scheme which can result in a loss.
- Then on the other side are the risks to energy security and the hedge for Suppliers, which could be caused by "gaming", where Capacity Market Units are still getting paid while finding ways out of their obligation to provide their capacity in ways that are not intended. This is a risk for Suppliers because it means the capacity may not be physically available to meet demand, but the charges which help fund their Difference Payments to enact the hedge in the energy markets are also reduced. To mitigate against this, there is a multiple market approach to Difference Payments and Charges to ensure that the risk of having to pay excessive price in any energy market is hedged and covered. The approaches to limit to risks on Capacity Market Units also have elements which limit the potential for gaming.

# Introduction and Overview – 12/13



# Introduction and Overview – 13/13

- The layer which reduces the risks in the Capacity Market can cause situations where the cash flow in from charges is not enough to meet the cash flow out for payments. Therefore the final socialising layer is included to ensure that payments and charges are matched. Included in this layer there is a fund with an additional charge for Suppliers, and an approach for calculating, tracking and reimbursing shortfalls in Difference Payments if required, intended to ensure the mechanism is revenue neutral.