



# CAP107 - Redefinition of Response Energy Payment (REP) for Mandatory Frequency Response

Presentation to CUSC Panel – 16 December 2005

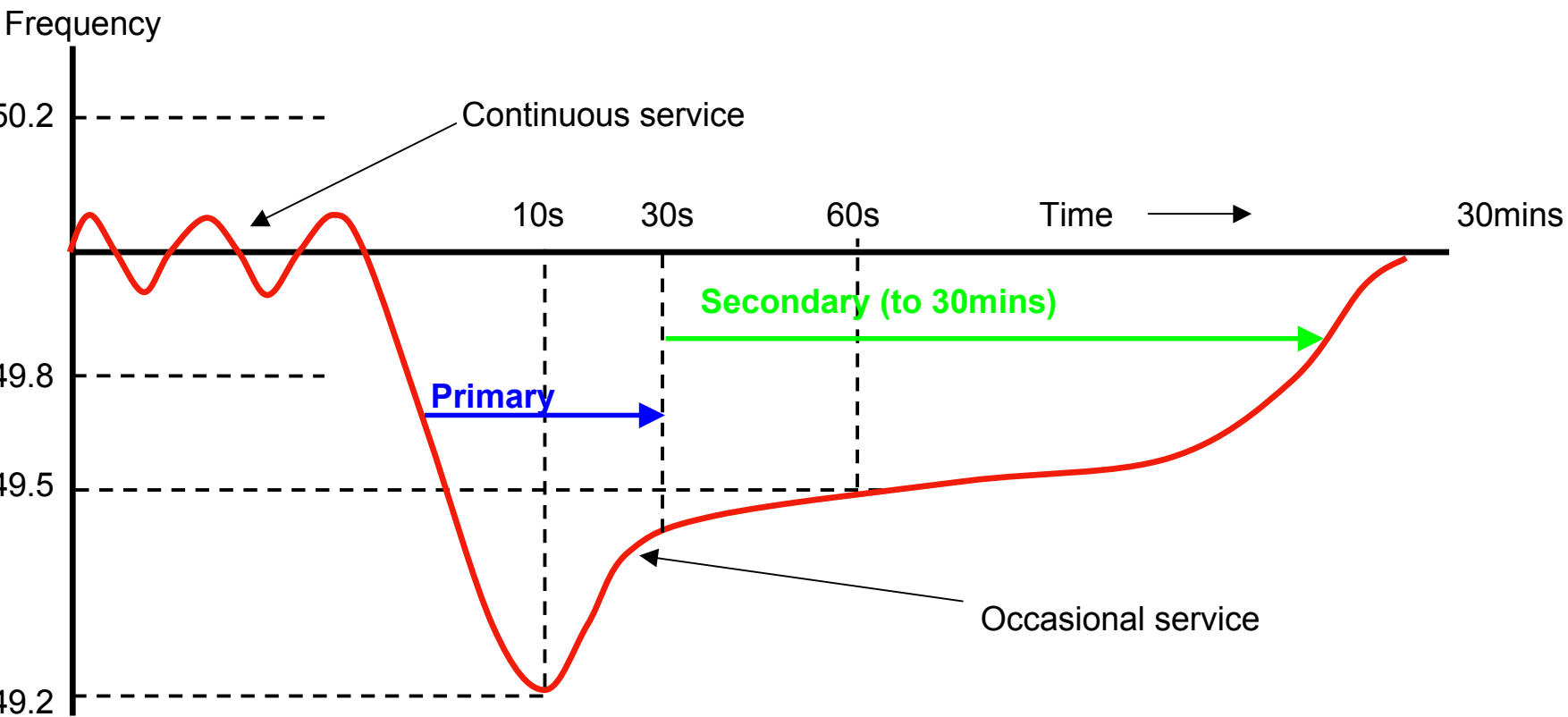
# CAP107

- Frequency Response
- Present Payment Arrangements
- The Issue
- Proposed Solution
- Issues to Consider at Working Group
- Recommendation

# Frequency Response

- Frequency Response covered by 4.1.3 of the CUSC.
  - CAP107 is about payments for “**Mode A Frequency Response**”.
- ⇒ Primary Response      }      Require increase in output to  
⇒ Secondary Response    }      increase frequency
- ⇒ High Frequency Response - Requires decrease in output to  
reduce frequency

# Frequency Response



Source: National Grid presentation to Ops Forum 27/11/2002

# Present Payment Arrangements

- Two payments defined under 4.1.3.9 and 4.1.3.9A.

## ⇒ Holding Payment

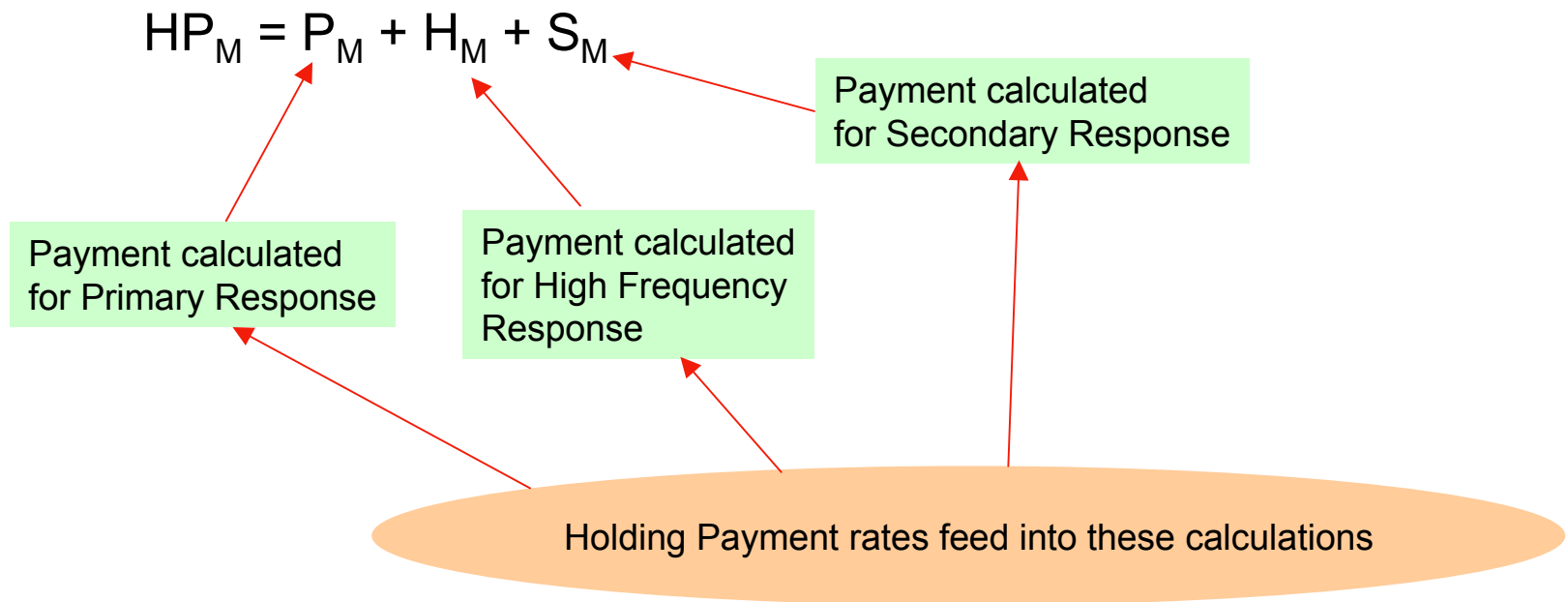
A payment per minute for providing service (dependent on combination of response being provided).

## ⇒ Response Energy Payment

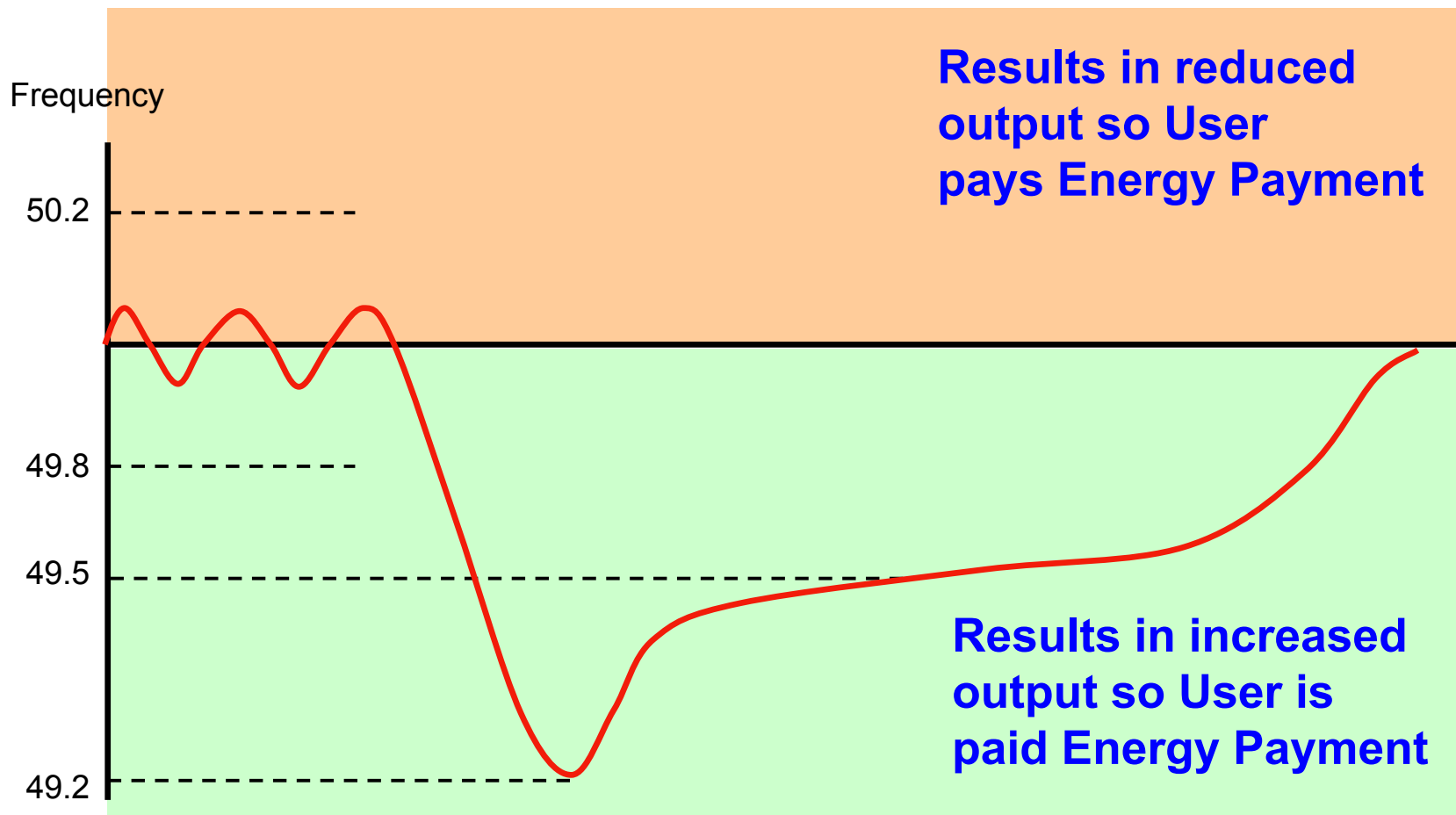
Payment per MWh for deviations in output as a result of providing response.

# Holding Payments

- Calculated from Holding Payment rates submitted by Users.
- Calculated in 4.1.3.9 of CUSC:



# Energy Payments



# Energy Payments

- Calculated in 4.1.3.9A of CUSC:

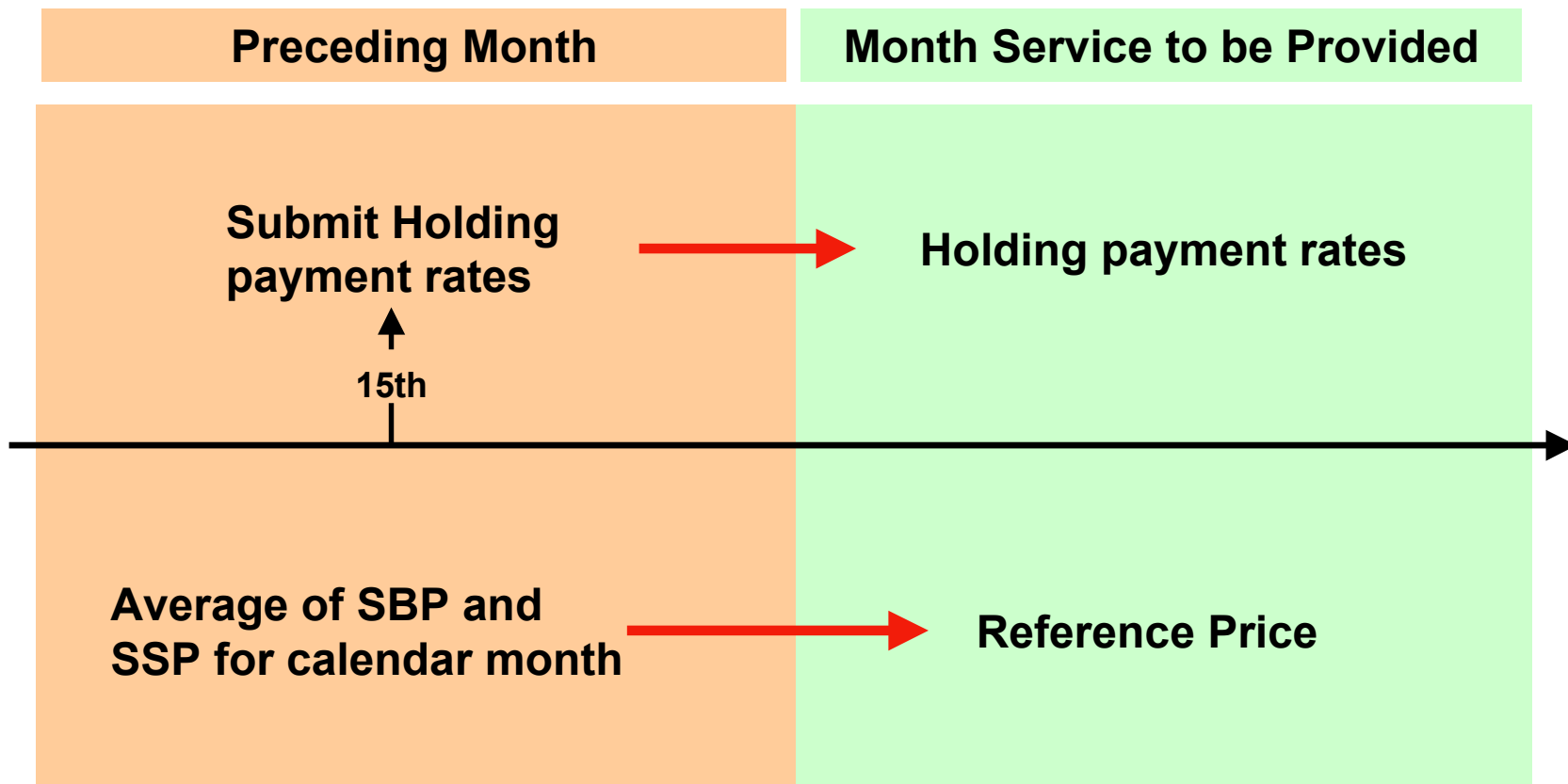
$$REP_{ij} = RE_{ij} \times \text{Reference Price}$$

 Estimated net change in energy in half hour as result of responding

- Reference Price = Average of SBP and SSP for previous calendar month



# Timings



## The Issue

- Generators face risk as:
  - ⇒ Average Reference Price cannot reflect wide range of costs of individual generation plant providing the service.
  - ⇒ Retrospective price cannot reflect real time position of generators.
- Therefore, incentive is to reflect additional risk in Holding payment rates.
- As Holding payment rates are set up to a month and a half before relevant date, this poses an additional risk.

## Proposed Solution

- Use the relevant BMU's first Bid Price instead of the Reference Price.
- Full solution would be for to define BMU specific Frequency Response Bid and Offer Prices, to cover payments from and to the User respectively.
- Aim of CAP107 is to keep implementation costs down and use an existing variable.
- Using one price also reduces gaming opportunities:
  - ⇒ May not know which way BMU will have to respond
  - ⇒ Therefore, could end up paying or being paid

## Issues to Consider at Working Group

- Considered raising standing issue, but wanted to get the ball rolling.
- Is first Bid Price the correct variable to use?
  - ⇒  $PB_{ij}^1$  is actually the first 'undo' Bid.
  - ⇒ Issue in relation to Standing Reserve Contracts ( $PO_{ij}^1 = PB_{ij}^1$ ).
  - ⇒ Could use  $PB_{ij}^{-1}$  or  $PO_{ij}^{-1}$ .
- Will this get in the way of 'normal' use?
  - ⇒ Can minimal sized MW Bid/Offer be used?

## Recommendation

- CAP107 is sent to working group for consideration.
- The BSSG would be the most obvious choice.
- The above issues are added to the Terms of Reference for the Working Group.