

## RESPONSE TO OFGEM OPEN LETTER ON CHARGING ARRANGEMENTS FOR EMBEDDED GENERATORS

Inenco is one of the UK's largest Energy Consultancies, which manages around £1 Billion of energy for commercial, industrial and public companies as well as some electricity generators.

We welcome Ofgem's open letter which seeks to encourage healthy debate and practical solutions to the challenges faced by embedded generators and the wider energy market.

Our view is that the changes to embedded benefits proposed by National Grid are mainly driven by some of the failings of the Capacity Market auction rules. As your letter points out, there are differences in the ways that large power stations are treated compared with small peaking plants embedded within the distribution network, which may give the smaller plants an economic advantage.

Inenco agrees that the capacity market should encourage the construction of large power plants that can provide electricity at higher efficiencies and lower emissions whilst also being capable of providing dynamic frequency support. However embedded generators that offer zero/low carbon electricity or which provide energy storage roles should be exempt from the proposed changes.

For fossil-fired generators that are built to offer capacity in the Capacity Market or to offer National Grid frequency services such as STOR or FFR, we would agree that embedded benefits could be reduced, but do not believe that charges are necessary. Many of the embedded fossil-fired generators have been built specifically to service these schemes and if operating costs for these plants are increased then this is likely to result in higher bid prices to the respective auctions, which may lead to consumers ultimately paying higher Capacity Market costs and will almost certainly see higher BSUoS costs.

On this basis, our detailed proposals are:

### EMBEDDED RENEWABLE GENERATORS

Renewable electricity generators are mainly embedded within distribution networks. These generators are not eligible to sell capacity into the Capacity Market and do not directly compete with large power stations as they normally need subsidies to be commercially feasible.

Over the past few years these generators have seen significant reductions in revenues due to factors outside of their control, these include;

- Reduction in wholesale electricity prices
- Loss of Levy Exemption Certificates for exported electricity
- Increases in business rates

The main beneficiaries of TNUoS are plants that generate non-intermittent electricity using waste or crops. Such technologies include Anaerobic Digestors, Waste to Energy, Biomass CHP and Landfill Gas. Many of these plants have the ability to profile their output to increase generation during peak periods, which we believe is beneficial to the grid and reduces the need to bring on less efficient fossil-fired plant during these periods.

We therefore propose that the existing structure of embedded benefits should be retained for all generators that currently receive ROC, FIT and CfD subsidies.

## EMBEDDED COMBINED HEAT AND POWER (CHP)

The majority of CHP plants are embedded within customer sites and have little or no electricity export, so these should not be affected by the proposed changes.

For CHPs that generate more electricity than the site needs, the surplus electricity is currently spilled to the local distribution network and is eligible for embedded benefits. If those benefits are withdrawn and possibly replaced by a TNUoS generation cost, then some CHP operators may be incentivised to cease or reduce their exporting of power and declare a zero (or reduced) export on their connection agreement.

Since 'Good Quality' CHPs have the lowest carbon emissions of all fossil-fired plant, any restriction in the operation of such plant could increase the carbon intensity of the grid.

We therefore propose that Good Quality CHP (as defined by the CHPQA Organisation) should continue to receive the current levels of embedded benefits.

## EMBEDDED ENERGY STORAGE

Energy storage devices such as batteries, pumped storage and compressed air storage offer significant benefits to the grid for both peaking generation and for frequency support. We are aware of a number of projects that are being developed in conjunction with renewable projects (most commonly for solar PV). Such projects aim to shift generation from the middle of the day (for solar) or at night (for wind and other technologies) to give maximum export during the evening peak. This has the benefit of both reducing the amount of generation at periods when demand is low and also of increasing renewable generation when system demand is high.

The business case for such technologies is largely driven by embedded benefits and any changes could jeopardise the roll-out of such schemes, which we believe could be essential to the future stability of the national grid.

We therefore propose that energy storage projects should retain the current level of embedded benefits.

## FOSSIL-FIRED PEAKING GENERATORS

As previously stated, we agree that it is preferable to build large gas-fired power stations rather than small diesel generators as part of the grid generation mix. However, it is not equitable or proportionate to treat all small generators in the same way.

We believe that the level of TNUoS and BSUoS benefits/costs should depend on factors including;

- Type of fuel & emissions to air from the generator
- Electrical efficiency
- Hour per year of operation
- Inclusion in National Grid balancing schemes
- Date of commissioning

Given the above, we consider that a more proportionate response to the issues raised should allow for the following embedded benefits framework:

- Diesel generators used for Capacity Market, STOR and FFR contracts - No TNUoS and BSUoS benefits should be offered for new plant
- High-efficiency Gas Engine used for Capacity Market and STOR – Reduced TNUoS benefit for new plant and no BSUoS benefit
- Existing generators – Grandfather existing benefits for a period of up to 5 years from the original commissioning date or to 1<sup>st</sup> April 2019, whichever is later

#### EFFECT ON CAPACITY MARKET COSTS

One consequence of removing, reducing or charging TNUoS and BSUoS costs for embedded generators is that such projects are likely to increase their bidding prices for the Capacity Market and for National Grid frequency response auctions. This may make the Capacity Market payments more attractive for new centralised power plants, but could also result in higher charges for consumers.

Although your open letter does not discuss this impact, we feel that the review of embedded benefits should be widened to a review of the Capacity Market to include the following key points;

- Review of eligibility of embedded CM benefits for generators that operate during peak periods
- Review of CM auction rules to provide better value for money for consumers – this should consider whether all auction participants should continue to receive the same payment as the highest bidder

We thank Ofgem for the opportunity to input into such an important discussion. It is essential that such reviews are carried out to ensure that there is an on-going balance between the cost, security and carbon content of the energy that we use.