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Exmos Srs.

A ENEL, pela sua experiencia da execução do processo de substituição de contadores em Itália, vem partilhar as suas conclusões através da participação na consulta publica lançada pela ERSE, sobre as funcionalidades mínimas e plano de substituição dos contadores no segmento doméstico e pequenas empresas.

Em anexo, encontram-se, não só uma breve resposta as questões colocadas pela consulta pública, mas também duas apresentações sobre o processo de substituição de contadores conduzido pela ENEL em Itália.

A ENEL consciente da complexidade deste projecto disponibiliza-se a trazer a Portugal um responsável ENEL pela gestão do sistema de contagem em Itália para uma apresentação promenorizada da sua implementação, da exploração potencialidades da solução e da sua importância para o sector eléctrico.

Lisboa, 25 de Outubro 2007

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**Answers to the questions reported in the “Consulta Publica sobre o Plano de Substituição e funcionalidades mínimas dos contadores para o segmento dos clients domesticos e pequenas empresas – Outubro 2007”**

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**Q1.** Which aspects is it necessary to standardize to ensure effective competition between meter manufacturers? By when do you think the standards will be stabilized, particularly with regard to communication protocols?

**A1**

In ENEL opinion the main goals to be achieved are the following:

- to evaluate the total cost for the system lifetime: this means to achieve the best price for the field components during the first stage of whole replacement of the meters and system deployment and, at the same time, keep the competition alive after this first stage when the yearly needs of field components to be replaced are less than 3% of the total;
- to have multiple sources for fields components and software development

These two goals can be achieved only in two alternative ways:

- the meter and system design to be owned by the Utility
- to have a standard

At the moment the only technology that is proven, referenced and cost effective for the low voltage network is the powerline (DLC Cenelec A band).

ENEL has no evidence about the communication protocols normalization in Europe and is not able to issue forecast about that. We have to notice that for low voltage meters standards designed for industrial meters are too heavy to manage.

ENEL owns a communication protocol deployed and referenced in Italy and it is available to discuss how to make it a de facto standard.

**Q2.** What technological difficulties impede the development of an integrated approach to the measurement of electricity, natural gas and water? What configuration is preferred for the collection of information from all the meters and its delivery to the systems of the respective companies?

**A2**

There are no technical difficulties delaying the development of an integrated metering solution. It is a matter of business evaluation. A dedicated Business Plan could demonstrate the potential ROI of an integrated metering solution deployment.

The best configuration is to design a separation of different data at the Central System level. The info's could be accessible through a portal and dispatched separately to gas and water companies.

**Q3** Does the list of functionalities reviewed include those considered to be the most relevant? What other functionalities should be considered as being fundamental to the new measurement systems?

**A3**

Yes, the list is exhaustive; we suggest to add the remote power supply control functionality (contract power control/subscribed demand control).

In addition, considering that the AMM Solution is able to collect data remotely from the meters, the requested functionalities could be reduced in terms of data stored inside the meter optimizing the design and the cost of the solution.

**Q4** What is your assessment of the correspondence provided about the functionalities of the new meters and the impact on the electricity sector?

**A4**

Real benefits achieved through the AMM Solution deployed in Italy are wider respect to what reported in the "Consulta Publica". In particular, other important benefits are customer satisfaction (i.e. invoicing on real consumption, tailored tariffs, more efficiency on contract management), opex reduction (i.e. remote activities management), revenue protections (i.e. bad payers management, checks on meters, energy balance, frauds), energy efficiency (DSM, customer consumption consciousness).

**Q5** What do you think of the evaluation of the potential benefits presented, with respect to their quantification? Which functionalities do you consider critical to maximise the response of consumers, particularly with regard to their consumption habits?

**A5**

There is a big difference, in terms of potential benefits, between an AMR and an AMM Solution. The AMM Solution supports a wider range of functionalities that permit a more efficient and effective contract management, enhancing the potential benefits. In particular the AMM Solution supports the remote control of the connection/supply: that is fundamental for a contract management (connection, disconnection, bad payers).

Contract management with a potential multi tariff offer are a very tangible driver able to change consumption habits.

**Q6** Are the costs identified for the new meters realistic in terms of the future?

**A6**

The potential cost of the meter is strictly related to technical requirements, product mix and volumes. Based on the AMM Project in Italy and thanks to the economy of scale, Enel has invested for the entire project 2,1 billion Euro for 30 ML electronic meters.



**Q7** What is your assessment of the cost-benefit results presented for the three scenarios considered? What do you think of the possibility of obtaining future advantages, when compared with the increase in costs to be supported by the measurement systems?

**A7**

The potential benefits depend on the operative process and related cost base of each utilities.

According to the Italian experience, savings for remote reading represent less than 10% of total savings.

This is the reason why AMM benefits with respect to AMR benefits are wider respect to what reported in "Consulta Publica".

Considering the overall real benefits Enel confirms that the Italian project payback period is 5 years.

**Q8** How do you value the potential of this market and what is the time horizon for its development? In what ways does making these types of services available increase the measurement system costs? What are the barriers which influence or impede these types of solutions

**A8**

Enel has already completed the deployment of the AMM solution. The solution is now fully in operation, managing remotely more than 30 million electronic meters.

The Enel AMM Solution has been already designed to support services listed in "Consulta Publica". The liberalization process requires availability of these new services already implemented in the Enel AMM Solution. For example, the support of load profile is already implemented in the AMM Solution as well as multi tariff structure, etc.

Additional services could be implemented upgrading the SW or modifying the HW.

**Q9.** Taking account of the number of meters to be replaced (around 6 million) and the experiences of other countries, what is an appropriate schedule for the bulk replacement of meters on BTN?

**A9**

The ENEL massive roll out plan of 30 ML meters in Italy started in 2001 and was completed in 5 years.

The estimated roll out plan should be defined accordingly with the cost benefits forecast recovery. We suggest to change meters as fast as possible.

**Q10** How might the replaced meters be of value? Will there be a market for the replaced meters?

**A10**

The lesson learned from the Italian experience was that it is more convenient to dispose of the old electromechanical meters. Nowadays Enel does not have any evidence of a parallel used meters market.

**Q11.** What is your assessment of the impact of the tariffs presented in view of the associated benefits of the new meters?

**A11**

Based on the Italian experience, considering the great benefits of the AMM implementation not only for the utility but for all the energy system stakeholders, the Regulator should push the implementation of the AMM Solution also through an incentive program covering the investment made by utility (i.e. by the Regulated Asset Base).

#### **ADDITIONAL COMMENTS:**

1. With reference to the requirement “real time clock” page 13, in Enel opinion there is no need to implement a clock synchronization while the meter is not supplied. Adding a battery enabling this synchronization would generate an additional cost without any real benefit. The meter will keep the requested accuracy (in compliance with applicable rules) with a maximum shift drift of 1sec/day;
2. With reference to the functionality reported in page 29, “display of characteristic values of the voltage and current wave (efficiency value, frequency, power factor, etc)”, in Enel opinion there is no advantage to the final customer in reading the values of the current wave on the meter display; this is particularly true for residential customers; The Enel meter displays power consumption for a programmable time period. In our implementation the integral value is referred to the average of last 2 minutes;
3. With reference to the functionality reported in page 31, tab. 4.2 “ability to total the measurement for 12 programmable periods (with 6 tariff period per day)”, Enel noticed that this functionality is not requested in the “Consulta Publica” and it seems not coherent with the functionality “aggregation of the measurement for at least 6 programmable periods (for at least 3 tariffs periods each day)” reported in page 31, tab. 4.2;
4. With reference to the functionality reported in pag 31, tab. 4.2 “selective load shedding (home automation applications)”, in Enel opinion the system architecture should be open to support this application but, as this functionality should imply additional investment to be implemented, a prior cost benefit analysis should be carefully performed.

