

DEFINITION OF INCENTIVE REGULATORY FRAMEWORKS FOR SMART METERING SYSTEMS

Roman PICARD
CRE – France
roman.picard@cre.fr

Maxime DELBART
CRE – France
maxime.delbart@cre.fr

Martin VERGIER
CRE – France
martin.vergier@cre.fr

Didier LAFFAILLE
CRE – France
didier.laffaille@cre.fr

ABSTRACT

Gazpar and Linky smart metering projects display exceptional technical, industrial and financial features. Their rollout will generate risks other than those DSOs GRDF and ERDF usually face when carrying out their normal activities. That's the reason why CRE defined specific regulatory frameworks that incent those operators to comply with the deployment timetable, to control investment costs and to guarantee the expected performance level.

INTRODUCTION

Since 2006 for electricity and 2007 for gas, French energy regulator has been working on smart metering rollout projects for retail markets. These smart metering rollouts are mandatory due to European regulation

(directives #2009/72/CE and #2009/73/CE of 13th July 2009 and #2012/27/UE of 25th October 2012) transposed in French laws (articles L. 341-4 and L. 453-7 of French energy code).

These projects exceed typical DSOs projects in terms of costs, duration and expected benefits for electricity and gas retail markets.

Given the weight of these projects and the need to hedge the risk of excess costs or completion times, a specific regulatory framework has been implemented [1] [2] that gives DSOs incentives to:

- comply with the deployment timetable;
- control investment costs;
- guarantee the performance level expected from the smart metering systems.

Project	<i>Linky</i>	<i>Gazpar</i>
Features		
DSO	ERDF	GRDF
Number of smart meters	35 million	11 million
Investment	Around 5 billion €	Around 1 billion €
Rollout period	2015 to 2021	2016 to 2022

Table #1: Main features of smart metering projects in France

TWO INCENTIVE FRAMEWORKS WITH SIMILAR PRINCIPLES

An incentive bonus is attributed to assets commissioned in the smart metering rollout projects. This bonus is awarded throughout the asset life time. The whole bonus will be given to DSOs if all timetable, costs and operation performance targets are reached.

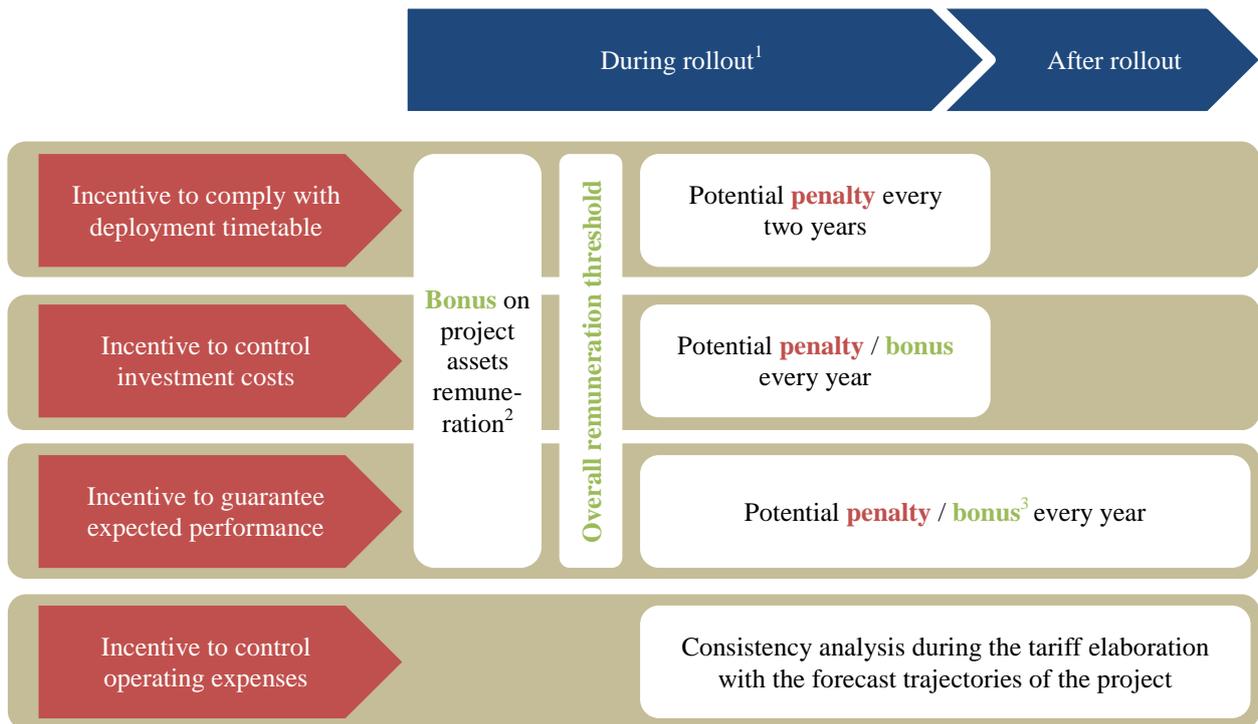
Any failure to meet the overall performance level will reduce the bonus. Below a certain level of adverse performance, the project remuneration will fall below the basic rate of return, down to a lower limit.

The incentive mechanism includes:

- an annual review of investment costs, with financial incentives if unit costs drift or are reduced;

- a biennial review of compliance with the forecasted rollout timetable, with penalties for late delivery;
- an annual review of the system's performance in terms of quality of service delivered from the start of the deployment phase, associated with financial incentives.

Lastly, operating charges affected by the projects will be monitored specifically, particularly when the next tariffs are being set. During each tariff definition, the CRE will ensure that the pattern of operating charges presented by DSOs is consistent with the projections both for costs reductions (mainly in meters reading, technical interventions and line losses) and for the costs of operating the metering system (related mainly to the information systems (IS) and system administration).



¹ except for *Gazpar* pilot project (i.e. year 2016)

² only for metering assets for *Gazpar* project

³ no potential bonus regarding expected performance for *Linky* project

Figure #1: global scheme of incentive frameworks

Incentives to comply with deployment timetable

The CRE has implemented an incentive-based regulation mechanism to ensure compliance with the forecasted timetable for the rollout. It relies on monitoring how far meters that are installed and able to communicate with the DSO IS follow the forecasted pattern of deployment rates. Monitoring takes place regularly throughout rollout. If the forecasted deployment percentages are not achieved, this generates penalties based on the following rules:

- monitoring takes place regularly from the start of deployment until the target deployment percentage is reached: every two years during the theoretical rollout period and then every year if the target deployment

- rate is not reached by the end of theoretical rollout period;
- at these dates, the number of meters that have either not been installed or are not communicating is determined;
- the penalty borne by DSOs is then proportional to this number of meters;
- a delay at the start of deployment is penalized less severely than a delay at the end, to allow for the operator's learning curve.

As cost and timetable are different for *Gazpar* and *Linky* penalties and dates are different but principles are the same.

	Theoretical rollout period			Over theoretical rollout period (if needed)	
	Y+2	Y+4	Y+6	Y+7	Y+8
<i>Linky</i> (penalty per meter in €)	5,40	10,80	16,20	10,80	10,80
<i>Gazpar</i> (penalty per meter in % of meter cost)	4	8	12	8	8

Table #2: Incentive to comply with deployment timetable

Incentives to control investment costs

The incentive-based regulation mechanism implemented by the CRE aims to encourage DSOs to make project-related investments at the best global cost. To do so, it uses the following principles:

- DSOs are penalized from the first euro of additional cost because they lose the basis bonus on this additional cost. If the additional costs exceed given percentages, remuneration of the investment costs exceeding these thresholds is gradually reduced, up to 0;
- from the first euro saved, DSOs keep a bonus equal to the bonus as it would have been with no saving. Users benefit also from this saving because it reduces capital charges (lower depreciation and basic-rate remuneration).

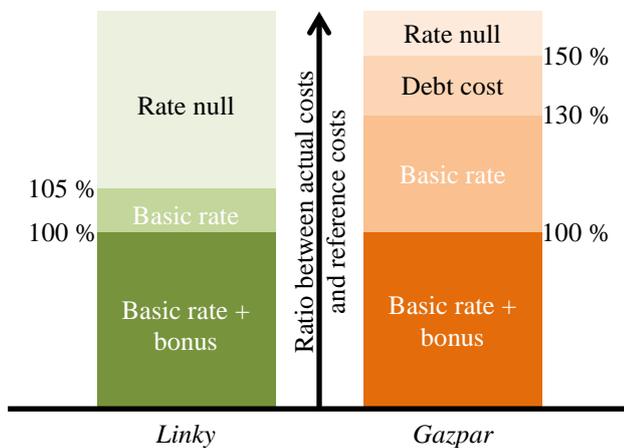


Figure #2: incentive mechanism to control investment costs

Incentives to guarantee expected performance

Quality of service provided by the metering systems is a key element not only to improve the functioning of energy markets but also to deliver benefits in terms of technical intervention and meter reading costs savings. Poor performance would have a significant impact on the economic value of the projects.

Against this background, the incentive-based regulation mechanism defined by the CRE aims to induce DSOs to reach the performance level necessary to reap these rewards and improve the functioning of the energy markets, to the benefit of consumers.

The CRE thus gives DSOs a bonus to induce them to reach a high performance level for their metering system over the long term. Conversely, any shortcoming in performance will generate penalties.

Incentives to control operating expenses

Operating expenses related to smart metering projects are treated the same way as other operating expenses. The regulatory framework for these costs already features incentives to reduce these expenses.

Depending on their nature (system charges, labour costs, R&D, etc.), operating expenses are either passed through and covered by the tariffs at their real cost, or covered by the tariffs based only on projected costs. In the latter case, the DSOs bear the risk of exceeding projected costs, and benefit from savings during a tariff period. The actual expenses level is then used as an input during the elaboration of the next tariff. Operating expenses related to smart metering projects will be specifically and closely looked at when elaborating the next tariff, in order to check their consistency with projected values.

SOME SPECIFICITIES FOR GAZPAR PROJECT

Pilot project

Unlike *Linky* project, there is not yet any pilot project for *Gazpar*. It will take place in 2016. Thus, the incentive framework takes into account the specific risks of this part of the project. For example, timetable of the rollout may be review by the end of the pilot project if needed.

Information Systems

A specific incentive framework is implemented to control investment cost in information systems. It lasts from 2014 to 2016 when most investment for *Gazpar* information system will be done.

REFERENCES

- [1] CRE, 2014, "Délibération du 17 juillet 2014 portant décision sur le cadre de régulation incitative du système de comptage évolué d'ERDF dans le domaine de tension BT \leq 36 kVA", *Journal Officiel de la République française* vol. 0174 of 30th July 2014, text #84.
- [2] CRE, 2014, "Délibération du 17 juillet 2014 portant décision sur le cadre de régulation incitative du système de comptage évolué de GRDF", *Journal Officiel de la République française* vol. 0174 of 30th July 2014, text #85.