



European Network of
Transmission System Operators
for Electricity

INCENTIVISING EUROPEAN INVESTMENTS IN TRANSMISSION NETWORKS

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EXECUTIVE SUMMARY

ENTSO-E wants to bring the financing challenge linked to the infrastructure investment challenge to the attention of policy makers, regulators and other stakeholders.

ENTSO-E welcomes the efforts already made in this area such as certain provisions for incentives outlined in the Energy Infrastructure Regulation, the budgets foreseen in the Multi-Annual Financial Framework and the restructuring of financial support mechanisms in the Connecting Europe Facility. Nevertheless, ENTSO-E warns that these efforts are insufficient to meet the challenge and calls for further action on risk reduction as well as remuneration. In this context, ENTSO-E presents its view on the next steps required to foster investment.

ENTSO-E believes that for the transmission infrastructure required to meet the EU policy goals to be developed in a timely manner, a framework recognising the particular financial needs of TSOs needs to be created.

Such framework goes beyond the national regulatory framework and needs a European component. This European component should not be limited to improving debt financing options or grants, but also has to incentivise equity financing. Without extra incentives for equity financing, both the size and the pace of the investment challenge remain out of reach. The attractiveness of the electricity transmission sector and in particular the risk-reward balance of the prioritised projects necessary to meet the EU goals should improve in order to be competitive at global capital markets.

Reducing risks and enhancing equity financing are complementary measures. To convince investors to finance complex projects, it does not suffice to only reduce risks when projects are labelled as priorities. Adequate and attractive remuneration must also be a prerequisite

Risk reduction is a typical national framework matter. To achieve certain European performance targets, a common overarching incentive should be fostered in addition to those country-specific regulatory measures to balance the higher risk related to this kind of investments.

Therefore, improving return on equity is crucial. This should be tackled at the European level. In this respect, ENTSO-E considers that a priority premium mechanism, i.e. an add-on or supplement on the typical TSOs' rate of returns, is an efficient and effective solution to differentiate returns and foster the required investments in a timely manner. According to ENTSO-E the leverage capability of priority premiums in raising funding fits with the aims of the Connecting Europe Facility (CEF). ENTSO-E has clear views on how a priority premium mechanism could work and which can serve as a starting base when creating the required legislative framework.

1 INTRODUCTION

The development of electricity transmission infrastructure in Europe is at a pivotal point. The delivery of an effective, competitive internal market, the realisation of renewable energy policy goals and the continuation of the high levels of security of supply which European consumers have enjoyed to date are all dependent on significant investment in new infrastructure, both within countries and across borders.

ENTSO-E welcomes the budget allocated for infrastructure in the Multi-Annual Financial Framework and is available to work with policy makers to optimise. Also, the recent and on-going developments and in particular the Energy Infrastructure Package and the Connecting Europe Facility are welcomed by ENTSO-E. The restructuring of financial support mechanisms in the Connecting Europe Facility is welcomed, but policy makers and regulators should acknowledge the specific needs of TSOs. Whereas grants and debt instruments could be useful in some cases, as outlined in this paper, a stronger focus on equity instruments is required. ENTSO-E takes the view on how financing the proposed amount of infrastructure investment remains a challenge and highlights the need of a well-adapted framework at national and European level.

Europe's TSOs are ready, willing and able to meet Europe's investment challenge and are keen to work with the European Commission, regulatory authorities and other stakeholders to develop practical solutions to the existing barriers to investment which are experienced today.

In ENTSO-E's view, the "user pays" approach to funding investment (in which the costs of investment are recovered via national tariffs) has proved effective in attracting investment to date and should continue to be the predominant approach to financing transmission investment. However, given the importance of transmission infrastructure in realising Europe's energy policy goals, it is imperative that regulatory regimes do not create disincentives to invest and are recalibrated to focus on the delivery of the outputs which European customers value and to maximise benefits to those customers. The scale of this challenge must not be underestimated

The appropriate conditions to attract the financing needed for the significant volumes of new investment will need to address the rigidities which currently prevent projects from being approved. A move away from a regulatory approach which focuses solely on cost reduction towards an approach which incentivises efficient and timely investment and must involve recognition that TSOs compete for investors in a global capital market place and consequently require returns which are proportionate to the risks they face.

However, implementing measures to address these issues, combining them with a series of flexible financing tools which can address specific risks faced by individual projects and creating the sort of stable, predictable and transparent regulatory regimes which investors value (and want to invest in) would represent a significant step towards delivering the investment that will enhance security of supply, promote the integration of renewable energy (on- and offshore) and stimulate the creation of an effectively competitive pan-European market.

In the TSOs' view, solutions to overcoming existing barriers to investment, which we are keen to work with the European Commission to develop, should follow a two-tier approach. On a national scale, the regulatory framework should target risk reduction. At the same time, a European framework, next to the initiatives already taken, and in addition to any existing incentives at national level, should be created to enhance equity financing.

This note outlines (1) the need for TSOs to be a competitive player on capital markets, (2) the reasons why risk reduction and equity enhancement are complementary necessary elements in incentivising investments and (3) how priority premiums could be an efficient and effective solution for equity enhancement.

2 THE CHALLENGE: COMPETING ON GLOBAL CAPITAL MARKETS TO FINANCE THE INVESTMENT BOOST

Achieving European energy policy goals requires strong and performing infrastructure. The electricity transmission grid is considered a key enabler in delivering sustainability, security of supply and competitiveness. The community-wide Ten Year Network Development Plan (TYNDP) identifies the required investments for the near future and clearly indicates that from a financing perspective the investment challenge is significant in two ways:

- *Investment size*: The overall size of investments, i.e. the overall budget required to accomplish the envisaged transmission infrastructure is unprecedented and requires attracting more capital to the transmission infrastructure business.
- *Investment pace*: Not only the overall investment size is huge and challenging, also the timing to deliver those new investments is challenging. The pace of investments required to meet the European policy objectives is higher than common investment rates in the recent past. Annual investment budgets have to increase in order to deliver the needed infrastructure within the required timeframe.

Attracting the necessary financial resources is not a straightforward task and should take into account business reality. Firstly, improving attractiveness for debt financing is a necessary condition but is not sufficient. Also, equity enhancement is necessary. As investment levels are significantly increasing, pure debt financing would deteriorate the TSOs' debt/equity ratios which would negatively impact on TSOs' ratings and consequently increase the cost of capital. Additionally, several TSOs are bound by a regulatory set gearing ratio, requiring them to always increase equity when taking up new debt, if they want to preserve a stable return.

Secondly, many of the investments ahead are not business-as-usual and entail more and new risks (cfr. section 2.1). Not only are investment levels increasing, the electricity sector itself is in transition. The general level of business risk TSOs are facing is on the rise and the level of risk attached to the investments specifically aimed for by European policy goals is often higher than the risk level of past 'business-as-usual' investments. Therefore, maintaining current rates of return for these investments is insufficient. To finance the grid of the future, this changing context should be incorporated in returns for capital through new and innovative mechanisms.

Hence, in order to tackle the investment challenge, it is of paramount importance that TSOs have good access to capital markets for both debt and equity financing. It should be recognised that on these global capital markets, the European regulated electricity transmission business and individual TSOs are single players amongst others competing to attract funds. Potential investors look for the best risk-reward balance and are as such indifferent in investing in the transmission sector or other infrastructure industries with similar risk profiles (e.g. natural gas, transport, broadband). If for the same risks a better reward is offered in other industries, TSOs will face serious difficulties attracting the necessary funds.

As a consequence, the framework created for TSOs should aim for a good risk-reward balance to convince investors. Any framework not aiming for this balance should be considered a barrier to attract investors thus making it difficult for TSOs to deliver the investments that are needed. To achieve this, two complementary routes to improve the framework should be followed: reducing risk and increasing reward. This is further explained in the next section.

3 THE SOLUTION: BALANCING RISKS AND REWARDS

An attractive and competitive risk/reward balance is crucial to convince investors in a globally competitive capital market. Policy-makers and regulatory authorities for TSOs have to create a fit-for-purpose framework that takes this reality into account.

In general, the following elements are pre-requisites for facilitating investments:

- *Stability and predictability* - When investors evaluate an opportunity to invest in a TSO, they look at both the existing package of rights and obligations the company faces and take a view on how those rights and obligations will change in future. Where stability and predictability are lacking, investors either go elsewhere or require a premium in order to invest, thus increasing costs. A similar situation occurs when banks or other lenders evaluate whether to provide funds to TSOs. The importance of creating a perception of stability can therefore not be under-estimated. Mitigating this regulatory risk can be achieved by, for example, committing not to adversely change a regime (or certain parameters within a regime) for a defined period of time. This sort of approach requires explicit commitments about approach to be put in place or clear limits regarding the scope for external factors to drive policy changes to be defined.
- *Transparency* - A second important characteristic is transparency. This relates to the need to understand how and why decisions have been taken and to the opportunity to challenge those decisions where required. This relies on open dialogue and the sharing of non-confidential information between parties.
- A focus on delivering outputs which customers value and on *maximising social welfare*.

On top of this, from a financing point of view, the framework should foster returns that are proportionate to risk and competitive to other comparable investment options.

Two complementary pillars constitute the core of such framework: risk reduction and equity enhancement. Whereas the former is to be guaranteed by national frameworks, the latter is to be tackled at the European level. This two-tier approach is further explained.

3.1.1 RISK REDUCTION

TSOs face several business risks:

- Regulatory risks stemming from changes in regulatory parameters, and/or discretionary regulatory interventions
- Legal risks as applicable laws and regulations may be subject to changes
- Permitting risks as new line routings need approvals which are ex ante uncertain

- Policy risks resulting from changes in the overall policy framework (e.g. RES subsidies, changes in the generation pattern which require changes to the transmission network structure)
- Technical risks arising from using new transmission technologies
- Market risks occurring as transmission infrastructure is used by the market where certain rules may be subject to changes
- Financial risks in particular if large amounts of financial resources have to be acquired

Cross border investments are particularly exposed to the above risks as they apply at least in two jurisdictions:

- Regarding regulatory risks this implies that the TSO who is exposed to a higher regulatory risk will be the limiting factor
- Legal risks multiply as laws and regulations of two or more jurisdictions apply
- Permitting and approvals need to be obtained in two countries and therefore more risk prone authorisation processes have to be undergone
- The overall energy policy framework of two or more countries is relevant
- New transmission technologies are particularly used for cross border investments
- The infrastructure is used by the European Market where particular rules apply
- Socio-economic benefits are more uncertain
- Financing projects in more than one jurisdiction is more risky

The national regulatory risk could be reduced by applying dedicated risk mitigating measures and incentives to cross border investments. Such measures could include:

- Stable long-term oriented regulatory framework
- Avoid the use of inappropriate benchmarking methodologies, because:
 - Benchmarking based on historical data does not incentivise for future investments
 - New technologies hinder comparisons with other projects
 - In general TSOs benchmarking are very difficult and unreliable
- Decrease depreciation and payback period

However, to achieve strategic European investment goals, a common overarching incentive should be fostered in addition to country specific regulatory measures to balance the higher risk related to investments of this nature.

3.1.2 EQUITY ENHANCEMENT

A more streamlined framework should enhance equity on a European level. The focus of such a framework should be to incentivise TSOs to deliver outputs which customers value and to maximise social welfare. In particular it should aim at prioritising those investments that are considered crucial by Europe.

Ensuring that national regulatory regimes incentivise efficient investments that are required from a European social welfare perspective will require significant changes to existing approaches and a much more pan-European focus than exists today. A European financial toolkit fully adapted to the actual needs, would be the last cornerstone for an efficient and effective European energy infrastructure policy.

At European level, important steps have been taken to improve debt financing. The project bond initiative aims at improving debt credit rating by leveraging senior debt through the creation of subordinated debt financed by European means, which is an important step forward. Furthermore, facilities to provide grants under certain conditions have been established.. However, this is insufficient to attract the necessary funds. The toolkit should have a much stronger focus on equity enhancing instruments.

The goal should be to provide common incentives which allow project prioritisation. Such a targeted approach is possible via priority premiums, i.e. a surplus on return on equity, for specific projects. Moreover, as explained in the next section, priority premiums are particularly well suited to be implemented at European level.

From an investor's point of view, the result would be a more differentiated return on equity, truly incentivising those projects that are a real priority and not merely increasing return on equity for the entire existing asset base or for projects that can be classified as business-as-usual. Note that a priority premium does not imply a harmonised return on equity throughout Europe. Only the surplus stems from a European mechanism and complements, for certain projects, the returns faced by individual TSOs.

4 COMPLEMENTING THE TOOLKIT: PRIORITY PREMIUMS – AN EFFECTIVE AND EFFICIENT EUROPEAN MECHANISM FOR EQUITY ENHANCEMENT

In this section the mechanism of priority premiums is explained. First it is argued that it is fit for purpose by highlighting the rationales behind the mechanism. Next, it is illustrated that such a mechanism is in line with a set of desirable principles. Finally, examples of US and Italian mechanisms of priority premiums are included to demonstrate how efficient and effective mechanisms lead to tangible results.

4.1.1 PRIORITY PREMIUM RATIONALES

RATIONALE FOR THE SCHEME 1: THE FINANCING PROBLEM TO BE SOLVED

Summarising the problem explained in the above sections, TSOs are regulated businesses and on a national basis, they earn a rate of return which reflects the overall risk of their business. To enable TSOs to contribute to the accomplishment of European energy policy goals there is a strong need to complement these national schemes by European investment incentives in order to help TSOs to:

- Attract (additional) investors for selected infrastructure investment which have to compete for financial resources with alternative investments within and outside the electricity transmission industry (cfr. section 1).
- Prioritise selected infrastructure investments as they are demonstrably more risky, more complex and hence less preferential compared to other projects due to technical, regulatory, legal, permitting and coordination challenges and the general increasing demand for additional infrastructure investments, (cfr. section 2.1).

RATIONALE FOR THE SCHEME 2: A EUROPEAN INCENTIVE TO PROMOTE EUROPEAN GOALS

NRAs are entrusted different missions (e.g. protect their national consumers, limit prices increases...) under their national laws which can sometimes deviate from EU priorities. It must be avoided that some cross border projects have a more Europe-oriented regulation on one side, while being slowed down on the other side by a less Europe-oriented regulation. An EU supplementary mechanism would help promote European goals.

RATIONALE FOR THE SCHEME 3: WHAT WILL BE ACHIEVED

Practical evidence demonstrates that priority premiums incentivise TSOs to realise an increased investment volume (cfr. section 3.3). More quickly delivering on crucial investments would lead to increased interconnectivity, stronger grids and a step forward to reach the European energy policy goals.

This would have significant benefits to customers and the overall EU economy in terms of:

- Timely and effective renewable energy integration and carbon reduction,
- Enhanced security of supply,
- System operation efficiency as more flexible switching options would be available,
- Increased market integration which fosters competition in the generation market and reduces market power,
- Decreased congestion revenues and redispatch costs.

RATIONALE FOR THE SCHEME 4: MINOR IMPACT ON A CUSTOMERS' OR TAXPAYERS' BILL

Priority premiums take the form of a relatively low percentage value which is in some form related to the overall investment. Compared to direct co-financing which normally requires a relatively high participation in the project expenses, fewer financial resources are required with priority premiums. This is in line with one of the aims of the CEF when introducing equity-oriented financing mechanisms.

⇒ IN A NUTSHELL

Priority premiums will:

- Attract investors in TSOs as they would be enabled to offer higher rates of return;
- Limit the number of projects to be co-financed as the priority premium concept would in some occasions replace direct EU participation in project expenses;
- Incentivise EU wide common prioritisation of specific projects.

This makes priority premiums a cost effective way of incentivising investments with moderate impact on the customers' or taxpayers' bill.

4.1.2 DESIGN AND IMPLEMENTATION

A new mechanism to incentivise a particular set of investments should follow certain principles in order to be fit for purpose and acceptable. An assessment of priority premiums indicates that such mechanism can be considered as an appropriate tool.

PRINCIPLES

Any incentive scheme should reflect the following principles:

- Provision of positive incentives for investment
- Simplicity and avoidance of administrative complexity
- Fairness between all customers and TSOs, even if national regulations differ
- Stability over time
- Transparency to all legitimately interested parties
- Incentives to prioritise investments and to deliver them quickly
- Quick and easy implementability
- Cost effectiveness and avoidance of adverse incentives (e.g. to increase or overstate costs)

CHARACTERISTICS OF THE PROPOSED MECHANISM

Following the Roland Berger study¹ a priority premium can be generally described as follows:

“The general idea behind priority premiums is to allow project developers additional return on equity (ROE) for certain projects [...]”

This list of certain projects should be inspired by European policy goals and the TYNDP provides a solid starting base. To be effective, the size of the premium is typically in the range of 1% to 3%.

Building further on this general description, ENTSO-E proposes to design the characteristics of a priority premium mechanism in such way that it most appropriately reflects the criteria entailed in the principles listed above:

- Priority premiums should be a return which is granted in addition to the country specific allowed regulatory returns/incentives. They should be fully independent from the methodology which determines the regulatory rates of return in each member state. This would enable a simple and timely implementation on EU level. The impact on national regulatory frameworks would be negligible.
- A Priority premium would have to be determined by the EC. This return should be granted on an overall nominal invested amount of money. In order to establish a simple, fair and easy mechanism the sources of capital should not be differentiated

¹ http://ec.europa.eu/energy/infrastructure/studies/doc/2011_ten_e_financing_report.pdf

(invested equity or debt). The return should be pre-tax in order to avoid complex adjustments for country specific tax rates.

- The determined priority premium should be granted on the (regulatory accepted) investment expenses at the point in time in which they are actually incurred by TSOs. They should be granted for a fixed period of time (e.g. 10 to 20 years). During construction time which might last some years, there should already be a premium on all expenses. This would provide strong incentives to invest early and to prioritise the projects. In order to ensure transparency these expenses should be fully reported and documented by TSOs.

- A single rate of return as priority premium would be preferential as any differentiation between different project types would involve some complexity. Projects generally serve more than one purpose and it is not always possible to differentiate between their impact on e.g. the Internal Energy Market, Security of Supply or RES integration. Therefore, a single rate would in particular ensure fairness and simplicity.

- Preferably, the funding should be organised at European level (e.g. CEF) In order to be compatible with European objectives. This makes it neutral from a national transmission tariff point of view. However, priority premiums can also be incorporated into national tariff structures provided that an appropriate European regulatory framework which foresees this possibility is available.

The above list of principles can serve as a base when creating a legal framework for such mechanism.

Annex 1 illustrates how a priority premium works.

5 INTERNATIONAL EXPERIENCE WITH PRIORITY PREMIUMS

Priority premiums are not new and have proven useful to boost investments in the US and Italy.

5.1.1 US EXPERIENCE

In the early 21st century the United States was facing a similar set of issues to those Europe faces today. This led policy makers and energy regulators to act. The extract below comes from a press release² announcing the legislative changes. As argued in section 2, also in the US measures to reduce risk are clearly complemented with measures to enhance equity participation.

The Federal Energy Regulatory Commission has finalized rules to bolster investment in the nation's aging transmission infrastructure, and to promote electric power reliability and lower costs for consumers, by reducing transmission congestion. The final rule identifies specific incentives the Commission would allow based on a case-by-case analysis of individual transmission proposals.

"Today's final rule provides increased regulatory certainty and procedural flexibility to encourage much-needed investment in all areas of the country," Commission Chairman Joseph T. Kelliher said. "There has been a sustained period of underinvestment in the transmission system. Notwithstanding, use of the

² Source: Federal Energy Regulatory Commission (FERC) – July 2006

nation's grid has more than doubled in recent years. It is clear that we need to strengthen the system to meet consumer demand and today's rule takes a significant turn in that direction. Underinvestment in the grid is a national problem. Today, we offer a solution."

The Energy Policy Act of 2005 directed the Commission to develop incentive-based rate treatments for transmission of electric energy in interstate commerce, adding a new section 219 to the Federal Power Act. The final rule implements this new statutory directive.

For the most part, the final rule adopts the proposals put forth in the Commission's November 2005 proposed rulemaking. Key provisions of the rule include:

- *Incentive rates of return on equity for new investment by public utilities (both traditional utilities and stand-alone transmission companies, or transcos);*
- *Full recovery of prudently incurred construction work in progress;*
- *Full recovery of prudently incurred pre-operations costs;*
- *Full recovery of prudently incurred costs of abandoned facilities;*
- *Use of hypothetical capital structures;*
- *Accumulated deferred income taxes for transcos;*
- *Adjustments to book value for transco sales/purchases;*
- *Accelerated depreciation;*
- *Deferred cost recovery for utilities with retail rate freezes; and*
- *A higher rate of return on equity for utilities that join and/or continue to be members of transmission organisations, such as (but not limited to) regional transmission organisations and independent system operators.*

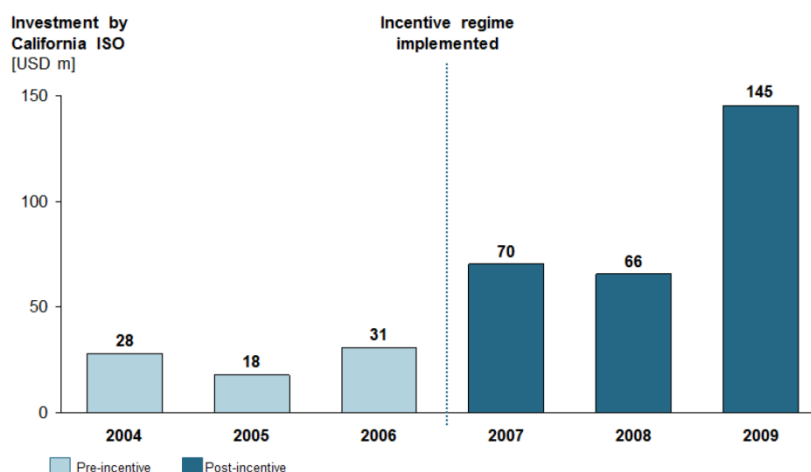


FIGURE 1: EFFECT OF INCENTIVES ON INVESTMENTS IN THE USA (EXAMPLE: TSO CALIFORNIA ISO) [SOURCE: ROLAND BERGER (2011)]

The new incentives created by the above US mechanism resulted in increased investments as indicated in Figure 1 for California. Since issuing Order No. 679 to establish transmission rate incentives required by the Energy Policy Act of 2005, FERC has evaluated more than 85 incentive applications.

5.1.2 ITALIAN EXPERIENCE (SOURCE: TERNA)

In order to incentivise and speed up the delivery of transmission investments, the Italian Regulator has introduced a set of incentive mechanisms.

The main one, set by Resolution 348/07, provides additional RAB remuneration (2% or 3%, for 12 years from the entry into service) on specific classes of development projects (those with the higher public benefit, mainly aimed at internal congestion resolution or at enhancing cross border capacity).

An ancillary incentive mechanism, set by Resolution 87/10, allows the Italian TSO to also receive the extra RAB remuneration on work in progress (hence before the entry into service of the projects) for a subset of said projects, provided that each year the TSO respects at least 70% of a set of project milestones. The mentioned milestones need to be proposed ex-ante by the TSO and are approved by the Authority.

The same Resolution also introduces a mechanism which triggers an additional per-project reward or penalty in case of early or late project completion. The overall system encourages Terna, the Italian TSO, to focus on the timely delivery of priority projects, aiming to align the TSO's incentives with the customers' priorities.

The Italian mechanism has been successful in triggering investments as indicated in Figure 2.

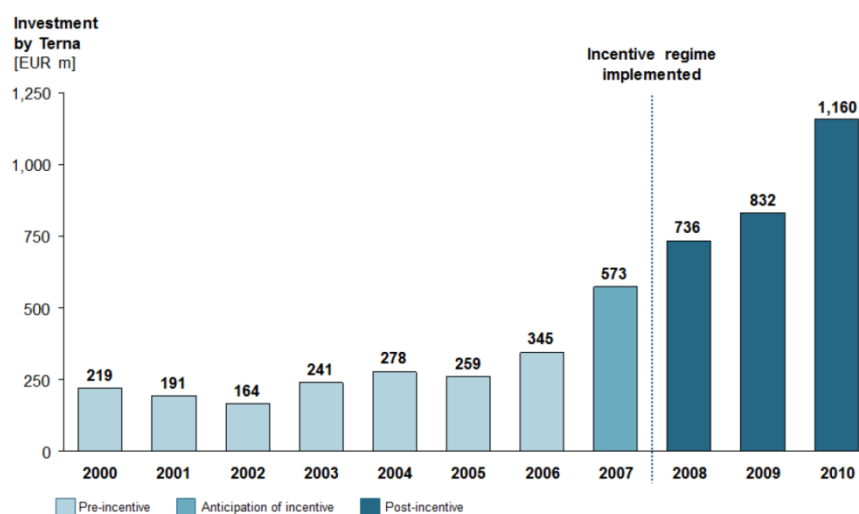


FIGURE 2: EFFECT OF EQUITY ADDERS ON INCENTIVES IN ITALY (ELECTRICITY) [SOURCE: ROLAND BERGER (2011)]

6 CONCLUSION

ENTSO-E believes that to facilitate the development of the transmission infrastructure required to meet the EU policy goals in a timely manner, a framework recognising the financial needs of TSOs needs to be created.

Such a framework goes beyond the national regulatory framework and requires a European component. This European component should not be limited to improving debt financing options or grants, but should also incentivise equity financing. Without extra incentives for equity financing, both the size and the pace of the investment challenge remain out of reach. The attractiveness of the electricity transmission sector and in particular the risk-reward balance of the prioritised projects necessary to meet the EU goals must improve in order to be competitive on global capital markets.

Reducing risks and enhancing equity financing are complementary measures. To convince investors to finance complex projects, it does not suffice to only reduce risks when projects are labelled as priorities, providing adequate remuneration, in terms of a common overarching incentive at European level is a prerequisite as well.

In this respect, ENTSO-E believes that a priority premium mechanism is an efficient and effective solution to differentiate returns and foster the required investments in a timely manner. The leverage capability of priority premiums in raising funding also fits with the aims of the CEF.

ANNEX 1: PRIORITY PREMIUM EXAMPLE

The following example illustrates how a priority premium works:

Assume an overall project investment of 10 Mio. €. The project is realised over two years with yearly expenses of 5 Mio. €. An assumed priority premium of 1% would yield 1% x 5 Mio. € = 0,05 Mio. € for each of these yearly expenses. These pre-tax premiums would be paid out the following year (e.g. for 15 years).

The table below illustrates the financial impact of the scheme for the example project:

Year	1	2	3	4	5 ...13	14	15	16	17	18
Investment	5,00	5,00								
Priority Premium for investment in year 1		0,05	0,05	0,05	0,05 ... 0,05	0,05	0,05	0,05		
Priority Premium for investment in year 2			0,05	0,05	0,05 ... 0,05	0,05	0,05	0,05	0,05	
Overall Priority Premium, pre-tax	0,00	0,05	0,10	0,10	0,10 ... 0,10	0,10	0,10	0,10	0,05	0,00