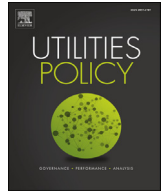




Contents lists available at ScienceDirect

Utilities Policy

journal homepage: www.elsevier.com/locate/jup

The regulatory experience of Italy and the United States with dedicated incentives for strategic electricity transmission investment

Nico Keyaerts ^{a, b, *}, Leonardo Meeus ^{a, b}

^a Florence School of Regulation, Robert Schuman Centre for Advanced Studies, European University Institute, Via Boccaccio 121, I-50133 Florence, Italy

^b Vlerick Business School, Vlerick Energy Centre, Bolwerklaan 21, B-1210 Brussels, Belgium

ARTICLE INFO

Article history:

Received 31 May 2016

Received in revised form

22 April 2017

Accepted 22 April 2017

Available online xxx

Keywords:

Electricity transmission

Transmission grid

Interconnection

Incentive regulation

ABSTRACT

There is a trend in regulatory practice towards providing dedicated incentives for strategic investments. Italy and the United States have the longest experience with authorizing returns and risk-mitigating incentives that deviate from standard regulatory treatment for policy purposes. In these countries, the regulatory incentives are based on a case-by-case assessment of capital projects. We find that the Italian scheme is simpler, which reduces administrative costs. The U.S. scheme is more advanced in the case-by-case assessment. Even though dedicated incentives may be controversial, our analysis of both experiences shows that, notwithstanding significant learning costs, both schemes have facilitated substantial financial investment in strategically important infrastructure.

© 2017 Elsevier Ltd. All rights reserved.

1. Introduction

The regulatory frameworks that apply to electricity transmission investments predominantly authorize comparable returns to all electricity infrastructure projects, irrespective of their costs and benefits, and irrespective of their unique risk profiles. Historically, and after vertical separation of transmission, there were sound economic reasons to uniformly remunerate all past and new investment in regulated asset base (RAB) based on the averaged risk profile of transmission firms (in the US) or transmission system operators (TSO) in Europe. Remunerating investment via the RAB constitutes a commitment by the regulatory authority so that the investor can recover the costs of past and new investment over the whole range of the risk spectrum and transferring much of the investment risk to electricity customers (Helm, 2009). Based on its historic success, it is easy to believe that this approach can be adapted to implement premium returns on investments that are deemed riskier than average.

In the years following the liberalization, raising the efficiency of the TSOs for the benefit of electricity customers became the

primary objective in most European countries. This objective lead countries to move away from cost-of-service regulation that is more investment friendly by passing on all costs and thus most risk to customers, towards the application of incentive-based regulation with an ex ante cap on allowed revenues and efficiency targets that put more risk on investors (Brunekreeft and Meyer, 2011; Jamasb and Pollitt, 2001; Microeconomix, 2008). The increased risk for the TSO will not compromise regular investment as long as the risk profile of the investment does not deviate from the average risk profile of the firm, which determines the revenue cap.

Today, however, many TSOs face again the need to invest more in strategically important projects that support the realization of national and EU energy and climate objectives. Considering that electricity markets and grids often cross geopolitical borders, strategic transmission investment is increasingly addressed at the regional level, as seen by the many interstate projects in the U.S.¹ or by the projects of common interest in Europe.²

Where there are significant transmission investment needs,

¹ See, for instance, the respective regional transmission plans in PJM, MISO, CAISO, etc.

² See the 2013 list of projects in Commission delegated Regulation (EU) No 1391/2013 of 14.10.2013 amending Regulation (EU) No 347/2013 of the European Parliament and of the Council on guidelines for trans-European energy infrastructure as regards the Union list of projects of common interest (EC, 2013a, 2013b).

* Corresponding author. Florence School of Regulation, Robert Schuman Centre for Advanced Studies, European University Institute, Via Boccaccio 121, I-50133 Florence, Italy.

E-mail addresses: nico.keyaerts@eui.eu (N. Keyaerts), leonardo.meeus@vlerick.com (L. Meeus).

regulatory authorities face an important question: how can the regulatory framework balance the objectives of incentivizing investment, on the one hand, and incentivizing efficiency improvements, on the other? Glachant et al. (2013) argue that in the tradeoff between the investment risk and the remuneration of the transmission firm, the national regulatory framework should ensure that the remuneration is sufficient for all investment, including the investment that is subject to greater cost uncertainty. This approach is fine to the extent that the necessary investment is comparable to regular investment. However, it could be less costly to offer dedicated incentives only to the strategically important investment, on a case-by-case basis, whereas regular investment remains subject to standard regulatory treatment. These dedicated incentives comprise a customization of one or more of the main regulatory parameters, which are the length of the regulatory period, the return on equity, the specified efficiency targets, and the scope of the revenue cap.

This issue has initiated a debate among practitioners in Europe in terms of regulatory policy for strategically important investment, especially if the investment has impacts across several countries. It could be argued that strategic projects should be dealt with in the same way as regular national investment because the standard regulatory treatment sufficiently addresses the risks of strategically important projects, or it could be argued that these projects justify dedicated regulatory treatment. The European Agency for Collaboration of Energy Regulators has documented all incentives for transmission investment that are currently applied in EU Member States (ACER, 2014), finding that most countries already foresee several risk mitigating measures. The debate on the two approaches, however, is very much open.

More and more countries are experimenting with dedicated regulatory incentives to speed up strategic transmission investment. Investment incentives are decided case by case, first deciding on the eligibility of a project for dedicated incentives and next deciding on an appropriate incentive package. Case-by-case incentives, however, are very controversial as they are often associated with merchant investment and their adoption could make it easier for third-party investors to contest the regulated monopoly for some projects. Nevertheless, dedicated incentives have been rolled out in several countries. In the UK, for instance, a dedicated incentive scheme already exists for the connection of offshore wind farms to the mainland (Meeus, 2014) as well as one for interconnectors to speed up EU market integration (Meeus and Keyaerts, 2014). France has been working on setting up dedicated incentives for interconnectors for the same reason (CRE, 2013). In Germany, large domestic and cross-border grid-expansion investments that support the German *Energiewende* are accelerated with dedicated incentives for what they consider strategically important investment (Meeus and Keyaerts, 2014).

However, the longest and richest experiences with dedicated regulatory incentives for strategic transmission investments are, in Italy and the U.S. In the U.S., dedicated incentives have driven an estimated \$13 billion of commissioned investments in the period 2006–2012 (Lum, 2012), with transmission investment steadily increasing after 2005, when the dedicated incentives scheme became effective (EEI, 2013, 2016). In Italy, nearly thirty large infrastructure projects, representing billions of euro in investment, have been funded through the dedicated incentive scheme (AEEGSI, 2014a, 2014b, 2016a; Terna, 2006, 2010, 2014). The contribution of this paper is to analyze the experiences of these two countries in detail. We show that even though there are significant

learning costs in their implementation, dedicated incentives have contributed to speeding up the implementation of strategically important infrastructure projects.³

The paper is organized as follows. Section 2 introduces the main logic of dedicated regulatory incentives through the Italian and U.S. implementation experiences. Section 3 describes how both schemes have evolved over time into more sophisticated and complex schemes, illustrating the significant learning costs involved. In Section 4 we compare the two approaches to provide dedicated incentives, finding that, even though the conceptual designs are significantly different, the available evidence suggests that both succeeded in speeding up investment. The paper concludes with the lessons learned for policy makers and regulatory authorities responsible for incentivizing transmission investment.

2. Dedicated regulatory incentives: comparison of Italy and the US

Dedicated incentives typically follow a two-step logic: (1) limiting access to the dedicated incentives to strategically important projects, and (2) offering dedicated incentives to facilitate the implementation of those important investments. The two-step logic is illustrated below for the Italian and for U.S. dedicated regulatory schemes, respectively.

2.1. Introduction to the Italian experience

The Italian policy makers, led by the Italian national regulatory authority AEEGSI,⁴ decided to prioritize important expansions of the transmission grid that were deemed necessary to promote competition and improve market integration in the aftermath of a countrywide blackout in 2003 (AEEG, 2003, 2005). We examine the Italian experience during the fourth regulatory period, which covers 2012–2015 (AEEG, 2011a, 2011b, 2013a; AEEGSI, 2014b). During this period, twenty-seven projects received dedicated incentives for important transmission investments (AEEG, 2013a; AEEGSI, 2014b, 2016a). Some of these projects are under construction or near completion, whereas other projects are at the stage of obtaining permits. In what follows, we first discuss the access to this scheme, and then the type of dedicated incentives that can be granted under the scheme.

2.1.1. Access to dedicated incentives in Italy

As illustrated in the upper part of Fig. 1, the developer submits the proposed project to the Italian regulatory authority. The authority then assesses whether the project is either an interconnection that connects Italy to neighboring countries, or a domestic transmission line that will reduce internal congestion. Both may constitute strategically important investments, given underlying policy objectives are increasing market integration and reliability.

Following a positive assessment⁵ of the investment, the project is granted access to the three types of dedicated incentives that are discussed below. In case of a negative assessment, the project receives the standard regulatory treatment for transmission investment. Any approved project automatically exits the dedicated incentive scheme after a predefined period, which is currently after twelve years of operational service of the transmission project, which is a significant extension of the standard four-year length of the regulatory period. It subsequently receives the standard treatment for its remaining regulatory lifetime. As the scheme has been initiated in the second regulatory period 2004–2007, the earliest

³ The level of success is however hard to objectively assess because there is no counterfactual case.

⁴ Before 2014, the Italian regulatory authority AEEGSI was named AEEG.

⁵ The internal procedure for this assessment is not publicly documented.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات