METHODOLOGY AND CRITERIA FOR EVALUATING INVESTMENTS IN ELECTRICITY AND GAS INFRASTRUCTURE PROJECTS

(ARTICLE 13(6) INFRASTRUCTURE REGULATION[1])

Revision 1.0

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[1] Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure (infrastructure Regulation)

Contents

1 INTRODUCTION

The European Commission, in consultation with EU Member States, has identified priority infrastructure corridors for electricity, gas and oil in Europe which are necessary to achieve the EU's core energy policy objectives of competitiveness, sustainability and security of supply. To facilitate timely implementation of projects contributing to these objectives, the European Community has adopted the Trans-European Energy Infrastructure Regulation (the TEN-E Regulation No 347/2013). Under the TEN-E Regulation, projects of pan-European significance can be granted a Project of Common Interest (PCI) status which may allow them to benefit from faster and more efficient permit granting procedures, European funding and improved regulatory treatment, where appropriate.

In addition, the Agency for Cooperation of Energy Regulators (ACER) has published the recommendation No. 03/2014, on the regulatory treatment (i.e. risk assessment and incentives) of PCI projects. In the recommendation, ACER has summarized the current national practices of risk evaluation and provided recommendations regarding a common methodology for risk identification and assessment.

Following article 13(6) of the Regulation (EU) No 347/2013 of the European Parliament and of the Council of 17 April 2013, each national regulatory authority shall publish its methodology and the criteria used to evaluate investments in electricity and gas infrastructure projects and the higher risks incurred by them.

This document is published in accordance with the Article 13(6) of the EU Trans-European Energy Infrastructure Regulation (the TEN-E Regulation) and provides a summary of the regulatory principles and the existing regulatory regimes as applied by the NRA in Greece, Regulatory Authority for Energy (RAE), including project assessment methodologies and criteria, which are applied to investments in electricity transmission and gas infrastructures.

2 EVALUATION OF INVESTMENTS IN ELECTRICITY AND GAS INFRASTRUCTURES

2.1 ELECTRICITY INFRASTRUCTURES

In Greece, High Voltage (HV) transmission infrastructure investments can be developed either by the national TSO, ADMIE S.A., or by a private investor. Regarding private investments the ownership, operation and maintenance of the assets is transferred to ADMIE S.A., as is the case when a renewable energy generator develops a new submarine interconnection that connects a non-interconnected island to the mainland transmission system.

The Greek Energy Law No. 4001/2011 titled "*Operation of Electricity and Natural Gas Markets, Hydrocarbon Research, Production and Transmission Systems and other regulations*", which transposed the provisions of Directive 2009/72/EC, frames the Development of the Greek Electricity Transmission system and sets powers to RAE to approve investments in electricity infrastructure.

According to Article 108 of Law No. 4001/2011, ADMIE SA, the Transmission System Operator, submits for approval a ten-year electricity transmission system development plan to RAE by 31 March each year, after a public consultation. The plan, which covers the period commencing on 1st of January of the following year, is based on existing and forecast supply and demand and contains efficient measures in order to guarantee the adequacy of the system and security of supply.

In particular, the Greek ten-year network development plan (TYNDP):

> (a) indicates the main transmission infrastructure that needs to be built or upgraded over the next ten (10) years, including the infrastructure needed to facilitate RES penetration;
>
> (b) contains all the investments already included in previous development plans and identifies new investments which have to be started in the next three years, and are binding for the TSO;
>
> (c) provides a technical and financial cost-benefit study for important transmission works as contained in subparagraph (b) above, especially for international interconnectors and connectors between islands and the transmission system, including a timeframe, estimated cash flow and financing requirements for all investment projects.

According to the Greek Electricity Transmission Operating Code (Code), details regarding the methodology used for the preparation of the technical and financial cost-benefit Study, as mentioned in subparagraph (c) above, and the criteria for assessing the benefits and costs of each project are specified in the Manual entitled "Instructions for applying Cost-Benefit Analysis for projects of the Greek Electricity Transmission System", which is issued by RAE decision following the proposal by the Transmission System Operator. For the submission of the relevant manual, the Transmission System Operator takes into account the methodology used by the European Network of Transmission System Operators for Electricity (ENTSO-E) to assess the cost-effectiveness of projects included in the EU wide ten-year network development plan. In the event that any of the important transmission works of subparagraph (b) above, offers significant socio-economic benefits in relation to cost, particularly to the final consumer, they may be characterized as "*Projects of major Importance* ". These projects are characterized as such by the RAE decision approving the Ten-Year Network Development Plan.

When elaborating the Greek TYNDP, ADMIE SA makes reasonable assumptions about the availability of production capacity and the evolution in demand and cross-border trade, taking into account investment plans for regional and Community-wide systems.

According to Article 14 of Law No. 4001/2011, RAE, following public consultation with existing and potential users, decides on amendments to the development plans prepared by the competent electricity transmission operator. RAE publishes the outcome of the public consultation and considers:

> (a) if the development plan covers all the requirements identified during the above consultation procedure, especially investment requirements;

(b) if the development plan is consistent with the corresponding non-binding Community-wide ten-year development plan for the electricity transmission system prepared in accordance with Regulation (EC) Nos 714/2009 and may then ask competent transmission operator to amend its plan accordingly. If there is any doubt as to whether or not the development programme is consistent with the corresponding Community-wide plan, RAE shall consult the Agency for the Cooperation of Energy Regulators established under Regulation (EC) 713/2009.

RAE monitors and evaluates the implementation of development plans. RAE also monitors the time needed for the transmission system and distribution system operators to connect users, effect repairs and provide services to system users. RAE may set deadlines for the above and penalty clauses for the benefit of users if deadlines are missed.

In circumstances where RAE establishes during the exercise of its powers that ADMIE SA, other than for overriding reasons beyond its control, is not executing an investment which, under the ten-year system development plan, was to be executed within three years, RAE, in accordance with Article 108 of the Law No. 4001/2011, can take at least one of the following measures:

(a) it shall require ADMIE SA to execute the investments in question;

(b) it shall organise an open procedure for the investment in question;

(c) it shall oblige ADMIE SA to accept a capital increase to finance the necessary investments and allow independent investors to participate in the share capital.

Where RAE makes use of its powers under point (b) of the previous subparagraph, it may oblige ADMIE SA to agree to one or more of the following:

(a) financing of the investment by any third party;

(b) financing and construction of the investment by any third party;

(c) building the new assets concerned itself; or

(d) operating the new asset concerned itself.

ADMIE SA provides the investors with all information needed to realise the investment, connects the new assets to the Greek electricity transmission system and generally makes its best efforts to facilitate the implementation of the investment project. The relevant financial arrangements will be subject to approval by RAE. In this case, the relevant tariff regulations shall cover the costs of the investments in question, in accordance with Article 140 of the L. 4001/2011.

Following the approval of the TYNDP, the recovery of investment costs through the user tariffs is ensured by RAE in accordance with its relevant regulations, as shown in the next section.

2.2 GAS INFRASTRUCTURES

a) ESFA and ASFA projects

In Greece, high pressure gas infrastructure investments can be developed either by the national TSO, DESFA S.A., or by a private investor. This has been portrayed clearly both in the first published PCI list (Commission Delegated Regulation No 1391/2013 of 14 October 2013) and the under finalization second PCI list that is prepared by the European Commission according to the principles and procedure set in the TEN-E Regulation No. 347/2013. In those lists both the national gas TSO (DESFA S.A.) and private investors have proposed to sponsor gas infrastructure projects.

As far as investments by the national TSO are concerned (i.e. investments to be part of the National Gas Transmission System, ESFA, as this is defined in art 67 of the Greek Law no. 4001/2011 and subject to TPA provisions), regardless of whether these investments are in the PCI list or not, the Greek Gas Network Code and the Gas Tariff Regulation set the procedure, methodology and criteria for deciding on new investments.

For projects that are not part of the National Transmission System, called independent natural gas system (ASFA) projects, two options are available: namely the non-exempted and the exempted regulatory regime. ASFA systems can be either a transmission system, an LNG system or a storage facility. According to the Greek legislation, independent natural gas system (ASFA) license holders are entitled to construct and own or, in the case of underground storage facilities, to use independent natural gas systems. Independent natural gas systems may be operated and utilised by holders of an independent natural gas system operator's (ASFA operator) license.

In case a non-exempted regime (i.e., full TPA regime) is applied for gas infrastructures to be developed by a private investor, the existing legal framework also calls for the existence of an ASFA Network Code and an ASFA Tariff Regulation where the procedure, methodology and criteria for deciding on new investments is included. These documents are prepared by the ASFA operator (TSO, LSO or SSO) and submitted to RAE for approval. To-date there has only been one ASFA license issued but no ASFA operation license issued. Should an ASFA operator license were to be issued, the provisions included in the national legislation call for the same principles to be applied when approving the ASFA Network Code and the ASFA Tariff Regulation as those when approving the related ESFA documents. In this case, during the process of the approval of the ASFA Tariff Regulation the risks and uncertainties related to the ASFA project would be assessed and compensated for in the form of regulatory incentives.

In the case an exempted regime is approved for a gas infrastructure as specified in article 36 of the Gas Directive 2009/73/EC (transposed into Greek legislation by articles 16 and 76 of the Greek Law no. 4001/2011), the specific regulatory framework for each exempted infrastructure is specified in the exemption decision. Any exemption is subject to the compliance with the five conditions listed in Article 36.1 of the Gas Directive, in a cumulative way. Given that one of the five criteria that is assessed by the NRAs when evaluating an exemption application is the risk of the project in reality, the exemption decision itself and the regulatory framework set herein addresses the risks and uncertainties of the project.

To-date RAE has assessed the exemption applications of two PCI projects, ITGI (7.1.5) and TAP (7.1.6). In these cases, the competent authorities of the countries involved (Italy-Greece in the former case and Italy-Albania-Greece in the latter case) and the European Commission have recognized the increased level of risk by issuing the respective exemption decisions.

b) Specific provisions and procedures on ESFA TYNDP

The only currently approved by RAE, Ten Year Network Development Plan (TYNDP) in Greece, is the one prepared and submitted to RAE by the Greek TSO DESFA S.A. every year according to the provisions of article 14, 68 and 69 of Greek Law no. 4001/2011 (ESFA TYNDP). The Greek TYNDP stipulates the works to develop, improve and interconnect the Greek natural gas system which need to be implemented over the next ten (10) years, the timetable and method for constructing such works and their budgeted cost.

According to the provisions of article 69, par. 1(ζ), of the Greek Law no. 4001/2011, currently in force, the Greek Ten Year Natural Gas Development Plan (TYNDP) shall take into account:

(a) information on the existing and forecast supply and demand of natural gas;

(b) compliance with general interest service obligations and security of supply of natural gas in a reliable manner;

(c) the need to improve the adequacy and efficiency of the National Natural Gas System (NNGS) and ensure that it operates properly, in the aim of preventing congestion, emergencies and refusals of access;

(d) the need to supply new areas with natural gas, in the aim of furthering regional development and providing access to new users;

(e) environmental protection;

(f) the Community-wide development plan and regional investment plan referred to in Article 8(3)(b) and Article 12(1) of Regulation (EC) No 715/2009;

(g) the viability of the projects included into the Plan and the possibility of their funding outside the NDP framework;

(h) the congestion management rules, the relevant obligations of users and DESFA SA and any details relating to the application of the said rules, in order to manage congestion at entry and exit points in the most economical way, based where possible on market rules, guarantee optimum use of the Greek natural gas system and allocate the existing transmission capacity to users of NNGS.

All the aforementioned elements constitute the criteria under which RAE evaluates the TSO's proposal on the projects to be included in the TYNDP.

According to the detailed provisions included in Chapter 12 of the Gas Network Code, the TSO prepares a Draft Development Plan (Draft TYNDP) which is submitted to RAE for approval by the 30th June of each Year. In the preparation of the Draft TYNDP, the TSO takes into account a series of factors, addressing the criteria listed above, as well as the 10-year NNGS

Development Study (TSO's projections on the supply and demand of natural gas)prepared by the TSO.

The Draft TYNDP is submitted after a first round of public consultation with stakeholders by the TSO. RAE performs a second round of public consultation (according to the provisions of article 14 of Greek Law no. 4001/2011). Within two (2) months as of the submission of the Draft Plan for NNGS Development, RAE may propose to the Operator modifications, mainly with regard to the inclusion of a new project into the Draft or the exclusion of a proposed project from the Draft or specific conditions so that a specific project can be included in the Draft. The Operator is obliged to fully substantiate the reasons why he did not include in the Development Plan any Scheduled Project. RAE has the competence to enforce the TSO to perform changes at the TYNDP regarding the Users' requests for new investments.

As far as investments by TSO DESFA are concerned, according to Greek Gas Network Code, all entities registered in the National Natural Gas System (NNGS) Users' Registry have the right to submit a request for new and/or incremental capacity at the NNGS at any point in the future. The Points of Entry, the Points of Exit, the Capacity requested, the desirable commencement date of providing Transmission Services, the technical description of the natural gas receiving facility or the connected System in which NG is discharged by the Transmission System if this is the case, and the estimated annual natural gas quantity delivered or received should be determined in the Application.

According to the Network Code, the TSO accepts immediately the User's request if this can be accommodated through an already planned (in the TYNDP) network expansions/enhancement. Otherwise the TSO proceeds in a feasibility study. According to the provisions in the Greek Gas Network Code (article 95B), the feasibility must include at least a technical evaluation of the application and an economic assessment.

Regarding the economic assessment of new projects upon Users' requests, the Tariff Regulation (article 5A) foresees that the TSO shall estimate the impact of the implementation of each such new project on the Average Tariff for the use of the NNGS during the Tariff Calculation Period. Only new investments at a User's request that fulfill the economic feasibility criterion are included in the Ten Year Network Development Plan. The project is considered as fulfilling the economic feasibility criterion (set in detail in the Tariff Regulation) if no increase in the Average Tariff for the Use of the System occurs upon implementation of the project.

In case of technical drawbacks, the TSO is also obliged to proceed with all possible actions/additional studies to ensure the implementation of the project, including proposals for alternative routes.

The Greek Energy Law no. 4011/2011 includes a general provision that the TSO, when developing the TYNDP and also assessing any application for new/incremental capacity, should take into consideration the contribution of the project to security of supply, penetration of natural gas to areas where it is currently unavailable, regional market development and environmental reasons.

In addition to the above, and according to the provisions of paragraphs 8 to 11 of article 63Θ of the Energy Law, once an investment (initiated either by the TSO or a network user) has been included in the TYNDP, RAE has the power to enforce the implementation of an investment that has been identified as one that needs to be executed in the next three years (in line with the provisions of paragraphs 6 to 8 of article 22 of the Gas Directive).

RAE monitors and evaluates the implementation of the TYNDP. In circumstances where DESFA does not execute an investment, which, under the TYNDP, was to be executed in the following three years, other than for overriding reasons beyond its control, RAE can take at least one of the following measures to ensure that the investment in question is made, if such investment is still relevant, on the basis of the most recent TYNDP:

(a) require DESFA to execute the investments in question;

(b) organise a tender procedure open to any investors for the investment in question; or

(c) oblige DESFA to accept a capital increase to finance the necessary investments and allow independent investors to participate in the capital.

Where RAE makes use of its powers under point (b), as above, it may oblige DESFA to agree to one or more of the following: (a) financing by any third party; (b) construction by any third party; (c) building the new assets concerned itself; (d) operating the new asset concerned itself.
In the cases above, DESFA shall provide the investors with all information needed to realise the investment, shall connect new assets to the National Natural Gas System and shall generally make its best efforts to facilitate the implementation of the investment project.
The relevant financial arrangements shall be subject to prior approval by RAE.

Where RAE has made use of its powers under the paragraph above, the cost of these investments are covered by the tariffs approved according to the provisions of article 88 of the Greek Energy Law. Similar provisions will be included in the future Network Codes of the future ASFA TSOs.

3 RISK MITIGATION MEASURES

3.1 METHODOLOGY FOR ELECTRICITY TSO - ALLOWED AND REQUIRED REVENUE

For electricity, the methodology for the calculation of the Allowed Revenue (AR) of the TSO is in accordance with the provisions of article 140 of law 4001/2011, as well as of article 275 of the Greek Electricity Transmission Operating Code (Code), as in force after Decisions 339/2014 and 340/2014. RAE decides on the forecasted AR of the Operator, for the next Regulatory Period (4 years, except the first period[2] where the duration is 3 years), based on the Operator’s relevant proposal.

[2] 1st Regulatory Period: 2015-2017

For the calculation of the AR, for every year of the regulatory period, the following are taken into account:

a. the annual estimated operating expenditure of each year,
b. the annual depreciation of the Operator's fixed assets,
c. the return on capital employed (based on Weighted Average Cost of Capital and CAPM model), based on the value of the Regulatory Asset Base (RAB) for each year, and the real, pre-tax, rate of return.

After smoothing the fluctuations of the AR, if needed, RAE calculates the Operator's Required Revenue (RR) for the next year. The RR, is composed by the AR, adjusted by the following parameters:

- The settlement amounts due to under-recovery or over-recovery (positive or negative sign) of the Required Revenue collected through the application of Use of System charges of previous years.
- The settlement amounts due to over-investment or under-investment of previous years.
- Revenues from Interconnection Capacity Rights Revenues from the participation in the Inter-TSO Compensation Mechanism for the infrastructure usage in previous years.
- Revenues from the participation in the Inter-TSO Compensation Mechanism for the infrastructure usage in previous years, which constitutes debit or credit (positive or negative sign) for the TSO and as a result is increased or decreased due to possible cost recover.
- Revenues from other, non-regulated, activities, providing that the capital employed and the operating expenses of these activities are not unbundled in the accounts and have been included in the estimation of the Operator's Allowed Revenue.

The RR is allocated at 100% to the total amount of Customers of the Hellenic Electricity Transmission System.

The Methodology, is a hybrid approach, as it is considered incentive–based (revenue –cap) in relation to operating expenditure (OPEX) and cost-of service in relation to capital expenditure (CAPEX). Particularly:

a. Regarding allowed operating costs, at the beginning of each regulatory period the Operator submits a proposal with an ex-ante estimation, based on actual costs in the preceding years and on future needs of the Transmission System[3]. RAE, after assessing the reasonableness and having done all the necessary adjustments, approves the relevant amount, as one of the three parameters of Allowed Revenue, setting a cap (maximum) for the OPEX, which is not subject to any adjustment during the Regulatory Period, apart from cases where the Operator has to cover significant and extraordinary operating costs during this period.
b. Regarding capital expenditure, there is a different approach:

[3] According to Operator's Business Plan

i. Allowed investments, new and in progress (whose implementation started in previous years and remain in progress during the specific year of the Regulatory Period), are forecasted and monitored distinctly for every year of the Regulatory Period, in accordance with the TYNDP and the Operator's business plan.
ii. Investments related to Projects of Major Importance, in accordance with the approved TYNDP, are included in the RAB during the year of their electrification and are not considered as investments in progress or new investments. The final cost of these projects, also includes a return on capital employed during the construction period, in accordance with article 10 of the Methodology.
iii. Possible deviations of previous years' approved investments, are adjusted annually, in line with the realized investments, following TSO's justification in case of major divergence.
iv. For investments in progress, where delays from the approved timeline are more than a year, the Operator is obliged to submit a report justifying the delays, in order for RAE to examine and decide whether these projects will continue to be included in the RAB.
v. Depreciation is calculated using the straight-line method, taking into account the economic life of assets. Depreciation for assets that were acquired through Grants and Contributions are not included in the AR.
vi. A premium rate of return can be provided, in addition to the rate of return for capital employed, for specific projects that are characterized as Projects of Major Importance in the TYNDP, in accordance with the process described in article 229 of the Code. This extra premium can range from 1% to 2.5% and is decided by RAE distinctly, upon the classification of a Project as of Major Importance in the context of the approval of the TYNDP. The premium rate of return is provided from the electrification of the project until the 12th year from the scheduled year of electrification according to the TYNDP, where it was defined as a Project of Major Importance, in accordance with the process described in article 229 of the Code.

3.2 BRIEF OVERVIEW FOR GAS TSO REGULATORY METHODOLOGY

Once investments proposed by the gas TSO are included in the ESFA TYNDP and approved by RAE, the costs related to those investments are taken into account in the calculation of the natural gas transmission and LNG terminal usage tariffs. Those tariffs are set according to the methodology established in the year 2012, in the form of the Tariff Regulation of the National Natural Gas System/ESFA (O.G. B' 2093/05.07.2012) pursuant to the provisions of article 88 of the Greek Law no. 4001/2011.

A cost based regulation approach (rate of return) is used in the Tariff Regulation. This approach guarantees the TSO a certain rate of return on its regulatory asset base calculated based on an ex-ante approved formula in the Tariff Regulation. Required revenue for each TSO activity (transmission or LNG terminal usage) is calculated for each year at nominal values as the sum of the Return on the Regulated Asset Base, depreciation on Fixed Assets, and Operating Expenses.

Only Major Projects, i.e., projects with an estimated cost of more than 130 mil. € are included in the regulated asset base from the year in which they come online, following an unscheduled revision of tariffs according to the procedure included in article 20 of the Tariff Regulation. All other projects approved in the TYNDP are taken into account in the regular procedure of tariff setting as these projects are in progress.

The methodology for recovering any over- or under –recovery of TSO's revenue in relation to its forecasted revenue (Recoverable Difference) is also included in the Tariff Regulation. Should major changes in the parameters used for the calculation of tariffs occur (i.e., forecasted gas demand, cost of borrowing, tax rate, average annual Consumer Price Index, new major project on-line), an emergency Tariff Revision is also provided for in the Tariff Regulation, either at the initiative of the TSO or RAE.

In addition, RAE can also decide every year in the process of the annual adjustment of tariffs on a (– X%) factor, in order to reduce the tariff by up to 25% to capture possible TSO inefficiencies in the management of the National Natural Gas System/ESFA. Up until now, RAE has not introduced an x factor.

With regards to tariffs, RAE, when evaluating the TSO's proposal for new tariffs (every 4 years) can either accept as a whole the TSO's proposal, or reject some of the elements to be taken into account, i.e., some of the TSO's operating expenses.

In conclusion, the approach adopted by RAE for tariff regulation of natural gas transportation and liquefied natural gas regasification aims at pursuing the objectives of adequacy, efficiency and transparency in setting tariffs, in compatibility with the Gas Directive 2009/73/EC and European Regulation 715/2009.

3.3 RISK MITIGATING MEASURES OF THE ELECTRICITY SECTOR

a) As applied to the TSO

The regulatory methodology for investments in electricity, as described above, has adopted measures in order to mitigate risks related to infrastructure development.

a. Risk of time overruns

All investments, apart from those related to Projects of Major Importance, which are submitted in Operator's proposal for AR and RR, are included in RAB as incurred and are remunerated through tariffs up to their commissioning. Therefore, there is no risk in case of assets under construction which take more time than anticipated to be commissioned, because they are still included in RAB as "work in progress", as long as there is an adequate justification from the Operator (see point 3.1.b.iv).

For Projects of Major Importance, where the return (increased with an extra premium as described above) is provided from the electrification of the project, a return on capital employed (rate of return based on WACC) during the construction period of the project is included in the final cost.

b. Risk of cost overruns

According to the methodology, the AR for each year of the regulatory period, includes forecasted investments, in accordance with the approved TYNDP. Any deviations between forecasted and actual investment costs (over- investment or under-investment), are settled with a two year lag (adjustments through Π_2 parameter of RR), following RAE's ex post review.

c. Volume risk

The Greek TSO is not exposed to volume risk. Annually, as part of the process of approving Required Revenue and setting tariffs for the next year, there is an adjustment (settlement amount due to under-recovery or over-recovery) of the revenues (RR) collected through the application of Use of System charges of previous years.

d. Liquidity risk

RAE, in order to mitigate liquidity risks regarding new investments, has adopted in the regulatory methodology the recognition of costs before commissioning of the project (recognition of WIP, excluding for projects of Projects of Major Importance).

e. Monetary reward

- Additional return on capital invested: for Projects of Major Importance, a premium rate of return (1%-2.5%) is provided, in addition to the rate of return for total capital employed.
- Application of the CAPM model: the return on capital invested (RAB) includes a premium that covers the market-related risks.
- Revenue-cap regime in relation to OPEX: a maximum cap is set for the OPEX, which is not under any adjustment during the Regulatory Period.

b) As applied to Renewable Energy Generators

According to Law no. 3851/2010, article 5(δ), there is a special provision regarding the electricity produced from Renewable Energy Sources installed in non-interconnected islands and islets of the Greek Territory and which are connected to the mainland transmission system through a new submarine interconnection that is necessary to transmit the energy produced, with the costs being borne entirely by the holders of the relevant production licenses. In this case the energy produced by these generators is billed with a premium on the Feed in Tariff (FiT) of up to 25%, compared to other Renewable Energy generators. This premium reduces the risk borne by these generators regarding the financing and construction of an important transmission infrastructure connecting a non-interconnected island with the Greek mainland transmission system.

3.4 RISK MITIGATING MEASURES APPLIED TO THE TSO OF THE GAS SECTOR

According to the current regulatory framework, and in accordance with Article 41(8) of the Gas Directive 2009/73/EC, the risk mitigating measures applied for TSO gas infrastructure projects in Greece to increase efficiencies, foster market integration and security of supply and support the related research activities are the following:

a. Regulatory stability

Regulatory parameters are defined for the whole regulatory period. Currently a 20 year tariff calculation period and a four (4) year regulatory period are used. In any case, according to the provisions of the Tariff Regulation, there is a procedure described regarding the event of extraordinary revision of tariffs. In addition, the procedure can either be initiated by the TSO or by the Regulator to account for major expected or unexpected circumstances which may materially affect network tariffs.

b. Volume risk

The Greek TSO is not exposed to volume risk. As tariffs are modelled right now, volume risk is faced only by network users because the amount of required revenue not collected due to a decrease in volumes will be passed on to the next tariff period using the recoverable difference mechanism (as an increase in the required revenue).

c. Time and Cost Overruns- Stranded assets

The relevant risks related to TSO projects such as time and cost overruns are currently remunerated through tariffs. The Regulation foresees that a recoverable difference clause is anticipated, where revenue not recovered through a specific regulatory period is forwarded to be recovered from the next regulatory period. As most of the TSO projects are tendered out in the form of an international tender with the participation of the market, the final unit price of each project is the result of an international tender procedure therefore market-based.

d. Systematic Risk

The allowed rate of return on assets is calculated using the Capital Asset Pricing Model (CAPM). The beta (β) factor that is part of the calculation of the Weighted Cost of capital (WACC), and applies to the Regulated Asset Base (RAB), provides a measure of the risk of investing in the industry. Using the CAMP approach, a premium concerning Greece's country risk is included.

e. Exempted Infrastructures

A practical recognition of the presence of regulatory, legal and financial risks upon a gas infrastructure investment is granting an exemption from TPA and other provisions according to the criteria and the procedure set in article 36 of the Gas Directive 2009/73/EC incorporated into the Greek legislation by articles 16 and 76 of the Greek Law no. 4001/2011.

To-date RAE has assessed the exemption applications of two PCI projects, ITGI and TAP and the increased level of risk has been evaluated and addressed in the respective exemption decisions.

Thus, the regulatory framework in Greece, by providing the above measures, guarantees a low level of risk for gas TSO infrastructures.