Summary

Background and main question
Interconnectors that link national grids are important for further integration of the European electricity grid. In the current assessment framework, investment decisions regarding interconnectors in the Netherlands are made by the national grid operator TenneT, after approval by the Dutch Ministry of Economic Affairs (EZ), based on the advice of the Dutch Office of Energy regulation (NMa). In this framework, TenneT bases its investment decision in particular on the costs and trade effects of the interconnector.

A main limitation of this framework is the fact that relatively little attention is paid to other considerations and (external) effects, both positive and negative, such as the effects on further market integration and competition, the security of quality and of electricity, integration of renewable electricity into the grid, environmental effects, the effects on grid congestion and on investments in new production capacity.

This leads to the question how both the assessment framework and the regulatory framework can be shaped such that the national grid operator TenneT conducts sufficient investments in interconnection that have a net positive effect on social welfare. Such an assessment framework needs to be aligned to the system that is being developed within the EU to assess the investment in cross-border infrastructure.

Against this background, the main question of this study is as follows: *What does a broadened assessment and regulatory framework for investments in interconnectors look like which secures optimal contribution of these investments to the social welfare of the involved countries?*

Towards a broader assessment framework: the Social Cost Benefit Analysis (SCBA)
For decision-making it is important to support investments that contribute positively to the social welfare. The SCBA framework (social cost-benefit analysis) contains guidelines to determine the social costs and benefits of an investment in interconnection. This has bearing on all effects that can be attributed to the investment, both financial and non-financial. For the non-financial effects such as consequences for the environment, methods are used that rate the effects in euros, thus enabling a comparison with other effects. The three core elements of the SCBA are thus social welfare, completeness and comparability.

Each SCBA follows these steps:

- Making concrete the investments to be analysed – the project alternative- and the situation without investments, the counterfactual.
- Drawing up a list of all possible effects of the investment.
- Quantifying the effects and subsequently the valuation of the effects in amount of money (monetisation)
- Discounting future amounts of money and determining the balance of costs and benefits.
- Analysing costs and benefits under various scenarios and a sensitivity analysis.

Next to determining the SCBA balance, attention is also paid to the distribution of the costs and benefits across the various actors involved in the investment. This provides information on the distribution of the SCBA balance. For interconnection, it is important to take into account at least the following actors for this distribution issue: the supply side of the electricity market, consisting of the producers of electricity and of grid operators such as TenneT, the buyers of electricity and the other stakeholders such as the government and citizens and consumers of environment and quality of the living environment. On the supply side, the producer surplus ('profit') constitutes the relevant measure, whereas for buyers this is the consumer surplus. For other parties, generic types of welfare may play a role, for example caused by externalities that are not exclusively measured by producer or consumer surplus. Of major importance to the SCBA are the avoidance of double counting, and the inclusion of welfare effects that do not occur via market allocation.

The counterfactual represents the most likely situation in the electricity market if the investment is not made. The project alternative is the investment decision that is to be analysed, for which information is needed on costs, phasing and capacity.

The analysis requires scenarios on the future 'state of the world'. Such a scenario involves the variables that influence the costs and benefits of the electricity supply, but are not influenced by the investment project. The scenario thus sketches the development of exogenous factors that require making assumptions about the future. This visualises the uncertainty of future developments. This can also be done within the scenario by working with bandwidths for the outcomes. The analysis should preferably work with clearly different, yet realistic scenarios. An obvious choice would be to use one scenario that is not favourable for the outcome and one scenario that leads to more positive results.

Investment costs and effects on capacity
All costs of the interconnection are part of the SCBA. These are the costs of the investment and all other necessary costs, such as for example the costs of grid adjustments elsewhere in the grid. Avoided investments in production capacity as a result of interconnection are behavioural reactions that are not included in most electricity models. This report advises to estimate these behavioural reactions based on an expert opinion.

The life of an investment is important in view of the replacement investments. In conformity with national guidelines for conducting SCBAs, the costs and benefits are calculated across a period of 100 years. In practise, this means that the costs and effects for certain target years are determined and that interpolation is conducted between the years.

In principle, the scope of the SCBA is limited to national effects. This renders the distribution of costs and benefits of the interconnection an important variable. Only the costs paid by Dutch parties are counted as social costs.

Taxation also plays a role. Cost items need to be measured including VAT and other cost-price increasing taxes.

National congestion

An interconnection cannot affect congestion or lead to a decrease or increase in congestion. An increase in congestion as a result of the interconnection makes for a special cost item; in case of decreasing congestion a special benefit arises. A network model can be used to analyse the occurrence of congestion in the national grid as a result of interconnection. This is done by means of extreme planning situations such as large-scale production of wind energy and extreme import and export situation to test the reliability of the national grid. The advantage of a market model is that it can be used to assess the economically optimal situation of an investment in interconnection. However, the current market models often only look at connections between countries and are unsuitable for the analysis of national congestion. The model considers the national grid to be like a uniform 'copper plate'. In the ideal situation, a more extensive market model is used that contains a (simplified) national grid representation.

The next question is which price is attached to the occurrence or decrease of congestion. In case of limited congestion, operational measures may suffice and the costs of congestion management are leading, with which demand and/or production can be influenced to remove congestion. In a market model with a representation of the national grid and the assumption of price zones, congestion immediately leads to a price difference. The weighted average price difference multiplied with the transported volume yields an estimate of the (avoided) congestion costs. When significant congestion is anticipated for national connections, grid reinforcement will be necessary. The costs of these additional investments of operational measures need to be part of the project alternative and hence be weighed in the assessment of the interconnector. Conversely, benefits of decreased congestion resulting from avoided operational measures or network investments from the counterfactual) should also be part of the project alternative.

Security of quality and supply

On the benefit side, it is important to make a distinction between security of supply and quality of supply. Security of supply involves the alignment between energy supply and demand in the long term. Quality of supply is the measure for reliability of energy supply and measures, for example, the frequency and duration of power outages and voltage quality.

In the electricity market, security of supply is mostly restricted to the import dependence of natural gas and biomass. The analysis can therefore be limited to these fuels. This can be done by means of a model analysis of the effects of the interconnection on the import and export of fuels for electricity production. The question is if the interconnection will lead to additional export of natural gas or biomass on a national level. To arrive at a valuation of this effect, this report advises using an indicator method, which calculates the economic damage of import dependence.

The effect on security of supply requires a calculation of the impact of the interconnection on the duration and frequency of power outages on the national grid compared to the counterfactual. The valuation of this difference can be based on empirical analyses conducted by the Dutch Competition Authority in the framework of quality regulation of the electricity grid. The result of this analysis is an amount of financial compensation per household and business based on changes in frequency and duration of power outages. As for voltage quality, good information is currently not available for including a possible effect in the SCBA.

Environmental effects
An interconnection may have consequences for the emissions of harmful gases or substances in electricity production. In case of import of for example sustainable energy through the interconnection, a change in the national fuel mix for the electricity production may be the result, leading to on balance lower emissions of harmful gases or substances. A lowering of emissions is a social benefit and is a component of the SCBA balance. To calculate this effect, the change in the fuel mix is linked to emission factors and valuation indicators, as available from the *Handboek schaduwprijzen (Shadow Prices Handbook)*. For CO_2 there is a different regime due to the existence of the ETS. A change in CO_2 emission can only count as additional cost or saving on the purchase of emission allowances, except for scenarios in which the ETS is abandoned after 2020.

Landscape effects
High voltage lines are considered visual pollution and hence lead to social costs. There is no generally accepted method for valuing such costs. This SCBA therefore uses a partly qualitative approach for this component. It is advised to meticulously describe the locations and line trajectories and to see if they cross any natural areas, recreational areas and other places that have a special social function. It also needs to be indicated if the lines are visible and for how many residents. If the trajectory involves lack of space, the loss of space should be valued against the social value of the ousted activity.

Renewable energy
The interconnection allows for increased import of renewable energy. This has certain trade effects, which are measured in the electricity model as a change in consumer or producer surplus. The integration of renewable energy in the national energy system has effects that are not or only insufficiently estimated by existing models. One can think of the effect of subsidising electricity production or the cost of higher or lower demand for back-up and control capacity. The possible costs of the latter can be calculated per case, based on the costs of TenneT on the balancing market. Any additional costs are fully passed on to the end users and are hence at the expense of the consumer surplus.

Competition
Interconnections can lead to trade effects through price convergence. An additional effect is the possible change in competitive relationships in the national market. The interconnections offer new competitors the opportunity to sell electricity on the Dutch market. This could decrease the market power of the national producers and create additional welfare for the consumer. This report advises using a rule of thumb for calculating this effect as long as electricity market models insufficiently estimate the dynamic competitive effects. The rule of thumb means that it is assumed that the interconnection generates an efficiency gain of 0-0.375% if the Netherlands experiences a decrease in wholesale market price as a result of a connection with a *cheaper* production country. In case of a connection with a more expensive country, it is advised to not include any effect.

Government budget
Realising an interconnection may impact the government budget through tax benefits and subsidies, yielding a potential welfare effect. The causal relation between the investment and the effect on the government budget could be further explored before offering a final advice to be included in the SCBA framework. Until more clarity is available here, the question of whether or not to include the effect on the government budget may depend on the question if this is relevant from the viewpoint of distribution.

Discount rate
The net present value (NPV) is the sum of all cash benefits minus the sum of all cash costs. The discount rate is used to calculate future amounts back to their present value. The standard value of the (real) discount rate to be used in SCBAs for the government amounts to 5.5%. A sensitivity analysis with a lower (4%) and a higher (7%) discount rate is recommended. For effects that are irreversible, such as a change in emissions of some harmful gases or substances, there will be an auction on the discount rate, resulting in a lower value of 4%.

Presentation
It is important to present the results of the SCBA neatly in tables. A distinction can be made between tables that present end results (focus on the net present value) and tables that serve to elaborate on the calculations that are at the basis of the end result. Both tables are important for a clear understanding of the results. Tables with results per *target year* indicate for each target year what the estimated effects are. These are both quantitative and qualitative estimates and welfare effects in monetary terms. For welfare effects in monetary terms, the quantitative effect is also mentioned. When a bandwidth is used for effects, this bandwidth is mentioned. For the sake of clarity, it seems obvious to present one table per scenario. Tables with cumulative, discounted costs provide the net present value of effects across the entire period. Once effects have been calculated in monetary terms, the quantitative effect will not be repeated in these tables. The tables distinguish between effects in monetary terms on the one hand and effects in terms of quantity or quality on the other hand. All these effects are included in the table. When a bandwidth is used for effects, this bandwidth is mentioned. One table per scenario can be selected, showing results of sensitivity analyses; or all scenarios can be put in one table, with the sensitivity analyses in separate tables. For monetary effects, the NPV is indicated, including bandwidths if these have been used for the calculation of effects.

Towards a better regulatory framework
With regard to the regulatory framework for investments in interconnections, we have particularly focused on the following aspects:
- Cost allocation;
- Investment versus efficiency incentives;
- Network Planning.

The main findings for these aspects are summarised below.

Cost allocation
When distributing the costs and benefits across the grid users, between and within countries, three types of problems occur that obstruct the realisation of a socially optimal interconnection capacity. For each problem, possible solutions have been identified.

Multilateral instead of bilateral agreements on interconnections
Because of unpriced grid effects (‘loop flows’) the costs and benefits of AC connections in a meshed grid (as in the Northwest European electricity market) partly end up in other, third countries. Bilateral agreements on interconnections do not include these effects on third countries and free riding by the third country or by the investors takes place. This may lead to too large or small investments or even investments (not) being realised while this is not desirable from a social point of view.

Free riding may be prevented by means of a more European approach to grid expansion as envisaged in the draft regulation COM(2011) 658 final. In this approach, the national regulatory authorities of energy markets (NRAs) are given the opportunity to decide on cross-border allocation of costs of PCIs in regional groups. The recommendation to the Dutch office of Energy Regulation (NMa) is to strive for a cost distribution based on the prescribed SCBAs in a regional framework, unless the result deviates significantly from the Dutch SCBA. This is the best way to ensure that investment decisions are mostly based on the overall societal perspective while at the same time securing the Dutch interest.

Applying the beneficiary pays principle rather than cost socialisation
Under the current network regulation, costs of interconnections allocated to a country are generally socialised to domestic producers and consumers (in most countries only national consumers) via national grid tariffs (in the Netherlands indirectly through settlement of network costs with congestion rents), based on national rules. Costs are distributed across (sub) groups of producers and consumers based on administrative regulations, without taking into account the changes in distribution of benefits across the grid users as a result of the interconnection. As a result, parties that pay for the interconnection are not compensated by benefits, while parties that receive benefits do not pay any costs for the interconnection. Hence free riding also occurs at the national level.

Cost allocation within countries can be improved by applying the beneficiary pays principle. However, full and exact application of the principle is not always feasible due to the high uncertainty about anticipated benefits of grid investments. If there is a real chance that benefits will be much lower than anticipated, grid users may object to the beneficiary pays principle and socialisation of part of the costs is inevitable. In the extreme case that the benefits are distributed uniformly and with equal chances across all possible situations, this implies full cost socialisation. If additional investments are needed on top of the economic optimum due to regulations aimed at securing the reliability of the grid, such as for example the N-1 criterion, these costs should be socialised given that all grid users benefit in this case.

Despite these limitations to precise and full implementation, implementation of the beneficiary pays principle is advised because it may yield substantial social benefits for the Netherlands, compared to the current situation based on cost socialisation.

Compensation of decrease in congestion revenue through higher grid tariffs
TSOs are most likely less able than before to recover costs from investments in interconnectors through congestion revenue. The expansion of the grid capacity will reduce congestion. This way, the revenue from grid investments decreases. The decrease in congestion revenue can be compensated with higher revenue from national grid tariffs and possibly also from the ITC mechanism.

The ITC mechanism is used by European TSOs to compensate each other through the ITC fund for the costs of electricity transport across their national grids due to cross-border flows. In view of the limited volume of the fund, compared to the real costs of using the current and expected infrastructure for cross-border flows, compensation payments between countries should increase. However, for the time being an increase in compensation payments seems unlikely due to the less than optimal design of the current ITC mechanism. Various possible changes are topic of European discussions. Where possible, the Dutch Ministry of Economic Affairs should promote adjustments to the ITC mechanism for those aspects that obstruct a larger role for the mechanism (for example dealing with loop flows, cost distribution, reshaping into a forward looking ex-ante mechanism).

If TenneT obtains more revenue from the national grid tariffs, the buyers will have to pay. These payments need to be in line with the net benefits experienced by producers and consumers as a result of the new interconnectors. The desired distribution of transport costs across producers and consumers can follow from deploying the beneficiary pays principle. Obviously, if producers need to pay less for transmission rights, they will start paying for the costs of the interconnectors by means of a producer tariff. A significant contribution of producers to cover the grid costs is currently obstructed by EC regulations. The advice to the Dutch Ministry of Economic Affairs is to lobby for amendment of the tariff limits in EU regulations to thus enable implementation of a significant producer tariff.

Investment versus efficiency incentives

The regulatory framework should promote socially desirable investments in interconnections and avoid non-desired investments. In this endeavour, the regulator is confronted with the following regulatory dilemma: on the one hand, socially desirable investments should be sufficiently incentivised and implemented, while at the same time not encouraging unnecessary investments; on the other hand incentives should be provided to the grid operator to ensure that socially desirable investments are efficiently realised, thus keeping grid tariffs for electricity users at a reasonable level, i.e. not higher than necessary.

In response to this dilemma, an approach was developed in the Netherlands (and abroad) to assess and regulate special investments in energy grids, including interconnections, consisting of the following two steps:

- *Necessity test.* In this first step, the 'usefulness and necessity' of a special investment in the grid is assessed by the national supervisory authorities (NMa, EZ);
- *Efficiency test.* In this second step, the effectiveness of the costs of a special investment is first assessed by the NMa. Moreover, the NMa determines the integration of the costs deemed effective, including the (auction) revenue of the interconnector, in the grid tariffs for the electricity users.

Under the current, regulated regime, emphasis is particularly on improving cost efficiency, thus offering insufficient incentive for TenneT to conduct socially desirable investments in interconnectors. Another deficiency of the current regulatory system involves the relation between the investment decision and the risk of/return on the investment. Under the current regime, TenneT is compensated for the investment cost in interconnection and hence runs only limited risk of financial windfalls or setbacks (which, through inclusion in the grid tariffs, are in fact passed onto the end users).

Alternative regulation options offering a better balance between guarding cost-efficiency and providing (stronger) incentives for capacity investments in interconnections are in particular:

- Better balance of investment and efficiency incentives within the current, regulated regime, in particular by giving a certain return to TenneT on the financing costs of an investment in interconnection or by introducing a bonus-malus scheme for all costs and benefits of an investment that TenneT can influence;
- Better balance between investment and efficiency incentives through an alternative regulatory system, such as the '*sliding scale*' regime;
- Better balance between investment and efficiency incentives through the introduction of various market and negotiation models, for example a cap & floor system.

Theoretically, the 'menu of sliding scales' regime is the ideal regulatory instrument for investments in transmission connections, including interconnection. This assessment is based on empirical evaluations of the system and the theoretical operation of the system, which secures a good balance between incentives for cost efficiency and capacity investments. However, the system is more complex than alternative systems that lack a 'smart' economic mechanism.

The ‘cap and floor’ system improves the investment incentives but may have an adverse impact on cost efficiency. Moreover, the mechanism has not yet been deployed anywhere, so there is a lack of information on practical experiences.

The best option to arrive at stronger investment incentives *in the short term* is therefore to provide certain returns to TenneT on the financing costs of an investment in interconnection or the introduction of a bonus-malus system for the total of all costs and benefits of an investment that TenneT can influence. For *the long term*, it is recommended to study the menu of sliding scales approach for investments in interconnection.

Network planning

Due to the 20/20/20 and 2050 EU sustainability targets and the strive for an internal electricity market per 2014, there is a larger social need for long distance transport within Europe and hence for more investment in interconnection capacity. At the same time, there is much uncertainty about the actual demand for interconnection capacity by grid users in time, particularly with regard to the amount and geographical location of new production capacity. On top of this, grid operators are facing uncertainty about the deployment of new grid technologies and the development of energy policy.

The uncertainty about the demand for grid capacity also implies high uncertainty about the return on new investments. As the economic life of grid assets is (much) longer than the life of production assets (40-60 years versus 20-30 years) there is a large risk of stranded assets, i.e. grid assets that can be used only marginally for the grid demand of another production mix, for example if the production mix does not develop consistently over time. A larger diversity in locations of production assets in time hence lowers the risk of 'recycling' grid assets and thus increases the risk of stranded assets. Stranded assets bring substantial social costs to the grid users.

TenneT uses various scenarios to identify extreme planning situations to include these uncertainties (implicitly) in grid studies on overloading of connections and required grid investments to prevent such overload. However, it appears that investment decisions need not necessarily be based on multiple planning situations; a decision based on one planning situation also seems to be acceptable under the current regulations. Nevertheless, an optimal decision should be based on the expected result of all planning situations to prevent stranded assets.

Moreover, due to a lack of coordination between investments in production and grid capacity, a TSO such as TenneT has only limited possibilities to decrease uncertainties by steering or controlling the demand for grid capacity at certain locations. Because of the connection and transmission obligation, TenneT is obliged to facilitate all requests for connection and transmission of electricity for all locations in all situations, and to strengthen the grid in case of a lack of grid capacity (the ‘transmission follows generation’ philosophy).

In reality, the production and consumption locations play a large and increasing role in the demand for grid capacity and the associated costs. An alternative to the European ‘transmission follows generation’ philosophy is the ‘generation follows transmission’ philosophy as used in the US. The ‘production follows transmission’ philosophy consists of two steps. The first step is to introduce the option of grid investments preceding generation investments (anticipatory investments). The second step consists of providing economic incentives to investors in production units to discourage as much as possible connection requests at locations that are expected to result in prohibitively high total system costs. Both steps enable TSOs to better manage the demand for grid capacity and hence to decrease the risk of stranded assets. This requires adjustments of the regulatory framework. The first step requires sufficient opportunities for anticipatory investments of TSOs. The second step requires changes in national policy to enable location-specific incentives through electricity prices, grid tariffs and spatial policy.

At the same time, there should be attention for political sensitivities that may cause these adjustments to be infeasible. Alternative solutions to prevent stranded assets are operational solutions such as improvement of the utilisation of existing physical interconnection capacity and permanent deployment of congestion management at locations where grid investments are not profitable enough due to larger scale deployment of flexible production and demand response.

Implications for the division of roles at the EU, regional and national level

The main implications of the proposed, broadened (SCBA) assessment and regulatory frameworks for the division of roles, tasks and actions of the main public bodies at the European, regional and national (NL) level are briefly summarised in the points below. These points are elaborated and clarified in the report.

European level:

1. *ENTSO-E:*

- Developing a European SCBA framework for the assessment of usefulness and need of investments in interconnections;
- Identifying European, socially desirable investment projects in interconnection.

2. *ACER:*

- European supervision of and, if needed, adjustment of the joint EU SCBA framework to prevent strategic behaviour among countries;
- Mediating/'enforcing' improved allocation of costs and benefits among more than two countries.

3. *European Commission:*

- Allowing a larger contribution of producers to grid tariffs by amending legislation (regulation);
- Adjusting the ITC regulations to eliminate current shortcomings and enabling a larger role for the ITC mechanism in international cost allocation;
- Striving for application of the beneficiary pays principle as a guiding principle for allocation of costs among and within countries.

Regional level:

4. Regional groups:

- Better coordination of national investment projects;
- National regulatory authorities (NRAs): Agreements on the allocation of costs and benefits among involved countries;.

National level:

5. *EZ:*

- Legal establishment and implementation of an obligatory SCBA framework for the application for (TenneT), assessment of (EZ) and advice on (NMa) investments in regulated interconnectors (both DC and AC);
- Assessment of the investment application of an interconnector (TenneT) based on the SCBA and NMa advice;
- International and national cost allocation should be based as much as possible on the beneficiary pays principle;
- Incentivising amendments to EU legislation (regulation) to enable a larger contribution of producers to the payment of grid tariffs;
- Promoting adjustments to the European ITC mechanism to eliminate current shortcomings and enabling a larger role for the ITC mechanism in international cost allocation;

- Fix the ‘production follows transmission’ philosophy in legislation to better align investments in production and grids and hence reduce the social costs of stranded assets;
- Remove barriers to the deployment of location-specific incentives (grid tariffs, spatial policy) and promote the implementation of more price zones in Europe;
- Offer more room in legislation for operational solutions to eliminate overload of the grid.

6. TenneT:

- Identify, apply for and conduct ‘SCBA proof’ investments in interconnections and national connections with significant impact on the electricity transmission through interconnectors (legal obligation).

7. NMa:

- Further elaboration of a full SCBA framework and periodical inclusion of new insights and experiences in this assessment framework ;
- Advice on the assessment of investments in interconnection based on the SCBA framework (legal obligation; advice to EZ;
- Further elaboration of an improved regulatory regime with stronger investment incentives for socially desirable interconnections ;
- After amendment of EU/national legislation, elaboration and implementation of a significant grid tariff for electricity producers .

Case study:
To illustrate how the developed SCBA framework will function practically and concretely, a case study was conducted of a ‘fictitious yet somewhat realistic’ investment project in interconnection. This fictitious project involves a 500 MW interconnector between the Netherlands and Denmark that will enter in operation late 2019.

In the framework of this case study, both the so-called ‘basic effects’ and some ‘additional effects’ of the above project were analysed, and, as much as possible quantified and valued in monetary terms. The basic effects include the usual effects within the current assessment framework. Next to the investment and other operational costs of a project, this involves so-called trade effects of an investment in interconnection, i.e. the changes in congestion revenue, the producer surplus and the consumer surplus in the involved countries.

The additional effects of the project are part of the broadened SCBA assessment framework. In this case study, the following five additional effects of an interconnector have been analysed:

- Effect on investment in production capacity;
- Effect on national congestion and grid investments;
- Effect on security and quality of supply;
- Effect on nature and environment (CO_2 emissions, landscape, integration of sustainable energy);
- Effect on competition.

The case study illustrates not only how certain social effects of an investment in interconnection can be analysed and calculated, but also the importance of a broader SCBA framework compared to the current, limited assessment framework for such an investment. The study shows that if, as is common in the current framework, only the two directly involved countries (Denmark and the Netherlands) would decide on the investment, the assessment, based on the Net Present Value (NPV) of the basic effects of the project would be negative for both countries. However, if other, third countries are also included in the assessment, some countries show a negative

NPV whereas others have a positive NPV, while the total of all involved countries remains positive. This illustrates the importance of a broader, international consultation and regulation framework, including international allocation of costs and benefits for the assessment of an investment in interconnection.

The case study also illustrates the importance of an SCBA assessment framework, both on a national and international level, for assessing an investment in interconnection. In this specific study, some additional effects are small whereas others are large, some are positive (benefits) while others are negative (costs), and some additional effects are small/positive in one country and large/negative in other countries. The study shows that, depending on the specific situation and the country involved, including these effects can shift the assessment of an investment decision from negative in a restricted framework to positive in an SCBA analysis, or reversely.