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CONTRACT **SD/EN/7A**

## **SEPIA**

**Sustainable Energy Policy Integrated Assessment**

A normative contribution to decision support

***Participative methodology - Evaluation***

Deliverable 1.4 - WP1 (Methodological Framework)

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Final report

**Authors:**

Patrick Italiano (ULg)

**Task responsible:**

Marc Jacquemain (ULg)

**Task partners:**

ULg

## ***I. Introduction***

Participation was at the core of the SEPIA project, and the different aspects of the suitable methodology have been discussed, focused on the needs of this project, in deliverable 1.3 “Participative Methodology”, included in the 2008 intermediary report.

The actual decisions about the issues implied by participation have been taken by the scientific team, under the responsibility of the ULg partner, throughout the process of the research, including the flexibility required w.r.t. initially planned phases when the actual proceedings showed that alternatives would better fit the needs of the work expected from participants. In the 2008 methodological report, several options were taken into account and discussed, but space was left open to weighing pro and cons of options described in the literature as good practices.

At the end of the SEPIA process and research, the description and evaluation of the participatory methods chosen can be divided into five points, which will be reviewed in this document:

- ❖ Selection and recruitment of participants
- ❖ Work scheme and adaptations
- ❖ Facilitation and tools
- ❖ Actual participation
- ❖ Overall evaluation

## ***II. Selection and recruitment of participants***

The SEPIA process distinguished between two groups of participants, called Scenario Builders Group (SBG), called to develop the scenario factors, hypotheses and storylines, and, on the other hand, the Stakeholder Panel (SHP) called to assess the scenarios modelled into the LEAP exercise.

It has been clearly distinguished in the methodological report that the SBG needed a profile of experts, and was more a specifically targeted expert panel, while issues of representativeness were raised when composing the SHP.

The selection criteria for both groups were thoroughly discussed by the scientific team during the second phase of the research. The different teams, each with its own expertise, came with proposals for organizing the field until a scheme was defined, which was subsequently filled with potential organizations of affiliation and names fitting the criteria.

### **1. The Scenario Builders Group**

Since the research team included experts who had already attended energy-related expert groups, and the driving forces of energy systems had been analysed, the organization of main and sub-fields of expertise relevant to the forecasting exercise could be agreed upon, and the field was divided into the following aspects:

<b>Field</b>	<b>Specific Expertise</b>
<i>R&amp;D, Innovation</i>	Micro-Electronics New Materials Nuclear technology (Gen III+, IV) Carbon capture & storage Hydrogen
<i>Technology (Sup., Tr., Distr., End Use)</i>	Resources / Energy security / Geopolitics Centralised electricity grids Decentralised electricity grids
<i>Governance</i>	Energy Efficiency Electricity & gas market regulation  Eur. Energy Policy (Euratom, ren.) Climate Policy
<i>Energy Economics</i>	Land Use planning Energy system modelling Financial aspects
<i>Ethics</i>	Ethics & Economy Sustainable Development

To these fields of expertise, following a good practice exposed in the methodological report, two journalists were also invited as a potential added value for the publicity the research could benefit from.

It had been also stressed that the criteria for the selection were, beyond the fields of technical expertise, attitude and skill-oriented, and thus needed a certain amount of personal knowledge for being recognized. The networks of the scientific team members could thus be reviewed as to identify and invite potential suitable people, owing to the personal ties and scientific reputation as for convincing the participants.

The invitation letter included a provisional list of invited persons as to incentive acceptance, based on the expected willingness to join a high-level expert group, and the possibility to exchange with others.

The size of the group was also constrained by the practicability of facilitating group work, with the two risks of a too small number if many would not show up, or a heavy to manage group if the maximum was reached. 20 was retained a reasonable size, in line with the recommendations quoted in the methodological report. The initial acceptance rate was good, with some experts indicating the name of colleagues when not in position to participate. The attractiveness of the proposal seemed thus quite good at that stage.

## 2. The Scenario Builders Group

The definition of criteria for defining the “stakes” to be represented within the SHP proved more difficult, as the available examples and criteria to be found in the literature showed serious variations in the categories involved.

The social mapping of the energy sector, as defined by VITO in a previous exercise, implied way too many actors, since the intent of organize some group work with physical presence of the stakeholders commanded a limit in the size, just as for the SBG. The recommended maximum sizes varied from 15 to 30 according to the techniques and authors, and a final decision was agreed on 25.

The final selection consisted in a kind of compromise between the composition of existing bodies and the criteria of authors listing categories of participants. The “stakes” and sub-aspects were defined as follows:

<b>STAKES</b>	<b>ASPECTS</b>
<i>Technology developers</i>	Nuclear technology
<i>Electricity producers</i>	CHP Centralised el. generators Decentralised el. generators
<i>Energy del., distr., &amp; cons.</i>	Gas trade/transport/storage Oil sector  Distribution (grids)  Large End Users Small End Users  Federation of employers Financial sector
<i>Equity</i>	Redistribution within nations  Redistribution within nations  Redistribution across nations Environmental impacts
<i>Political parties</i>	Energy Poverty Liberal  Socialist  Christian Democrat Ecologist

They included stakes which can be defined as “internal” to the energy sector, representatives of users or other actors such as finance, representatives of issues related to equity under several aspects, and political “worldviews” individuated in representatives of study centres of political parties (and not politicians as such).

Moreover, the criteria included the following:

- The organizations “representing” the selected stakes are already represented in existing bodies or commissions
- The individuals selected are willing to think beyond the mere representation of their organization and/or interests
- They have a sufficient command of the energy-related issues and systems
- They are fluent enough in English
- They commit themselves to participate to all the stages, providing they accept the structure and conditions of the process

The actual selection of the invited people combined the use of professional networks of the team members, and search for suitable persons through indirect contacts.

The initial invitation for the scenario builders group and the stakeholder panel proved rather successful, at least in theory, as the contacted persons showed interest and curiosity for the project, and were convinced of the importance of the research.

### ***III. Workshop schedule and adaptations***

The work programme, whose actual version has been summarized in the document “Stakeholder involvement in the SEPIA project” by Erik Laes (document attached), was from the conception of the project an ambitious one. Since the scope itself of schematising energy system scenarios at 40 years encompassed many aspects, hypotheses and factors, the goal of raising a consensus among the experts needed many tasks. Those were planned in a rather tight schedule compared to the amount of information to be discussed and decided upon. The initial schedule for the core work had planned the scenario to be constructed in three phases, over three workshops, spread over less than three months. The methodological report on participation had also already stressed that similar experiences had showed a heavy workload on the scientific team for computing the experts’ production. The workshop themselves were quite heavily loaded with tasks as to go through the phases needed from the selection of factors up to the estimations expected to feed the LEAP exercise.

The initial workshop, attended by both scenario builders and stakeholders went as planned, as the consensus was obtained on the Terms of Reference (including agreement on the sustainability principles), questions were answered on all the aspects of the research process, and the request for some initial inputs from stakeholders (about their elements of vision for a sustainable energy system) were collected.

When planning in detail the first scenario building workshop (SBG-W1), it became clear that even on a full day, selecting the relevant factors, defining elements of foreseeable evolution and uncertainties for them, and prioritizing the resulting list would fill the full day. On the other hand, the scope of defining a matrix of interdependence between the factors didn’t need a face to face interaction, and could thus be asked as an individual task to be filled after the workshop day itself. This task was thus proposed as an internet consultation to be send out

within a few days after the workshop, since the factor set itself was agreed upon at the workshop.

The addition of such a step then made clear that the scientific team could not be able to work out the result of the matrix exercise within the time scheduled for what was planned as SBG-W2, due in February according to the initial schedule. The documents elaborated by the team should have been sent out to the experts before SBG-W2, leaving only a couple of weeks even in the optimistic case of all experts filling the matrix in time.

On the other hand, it appeared also clear that the experts' agendas were busy, and spending full days for attending our workshop needed much effort, it seemed reasonable to gain in flexibility with the replacement of the planned SBG-W2 with an internet consultation. The task of giving feedback on the "building blocks" of the scenarios, developed by the scientific team as hypotheses (delineated during a phase of SBG-W1) related to the factors selected during SBG-W1 and ranked with the matrix exercise could be well implemented into a newly developed tool called Mesydel<sup>1</sup>.

The presentation of the tool raised much interest among the scenario builders and its functionalities proved useful for the task, allowing sparing the investment of a day of expert's time in favour of a home task, more flexible.

The assessment of this change in the program is positive. The team could prove being flexible in the planning of the work when faced with tight schedule, and find original solutions to the difficulties. It allowed having the tasks filled and the overall schedule respected. The change was well received as the experts were pleased with the new tool. On the other hand, feedback from some experts showed that the occasion of exchange with others was an important reward for the time spent in our exercise, and replacing a workshop with an online consultation somehow impoverished such exchanges. This drawback was compensated with comprehensive reports to them from the scientific team about the production. We will discuss below the actual participation, which kept being satisfactory at that stage.

The team needed indeed the flexibility allowed by not having a fixed date for SBG-W2 for computing the output of the previous steps. The elements from the SBG-W1, matrix exercise and Mesydel consultation led to sets of hypotheses of the key factors which could be used by the SBG-W3 for developing them into scenario skeletons.

The SBG-W3, consisting mainly into developing the 3 scenario layouts, proved very intense for the participants. When all three have been developed, a hindsight look and a very interesting discussion followed on what did mean the three scenarios outlined. Yet, at some point in the afternoon, and due to the limited number of experts attending, it became explicitly necessary to stop the work, when the hoped for detail in backcasting pathways and scenario narrative had not been fully reached. The facilitator recognized that the participants declared themselves exhausted with the exercise so far, and could not go further with the task. This is probably the result of two factors: the demanding nature of the task itself, and the fact that the small number of participants needed them to express themselves not only on their own, direct field of expertise, but also on other aspects.

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<sup>1</sup> See <<http://www.mesydel.com/mesydel.php>>

This also implied that the following workshop, which should have been focused on the value tree, was extended to include a feedback on the storylines developed by the project team from the SBG-W2 production.

For the last step of consultation, addressed only to the stakeholders, the initial questionnaire needed also a strong simplification as to react to the initial lack of response. A first, full size assessment questionnaire was implemented on an online platform. Mesydel, which had proved excellent for the SBG-W2, was unfit for the requirements of the assessment as it didn't allow an output as numeric database, while adapting an online survey platform, despite much work for suiting it to the task, allowed both the large open fields for comments, and the numeric values format that the DECIDER tool required. Yet assessing the three scenarios over all the criteria and sub-criteria was a huge task, even while the tool allowed saving and resuming it later, or leaving it partially filled. The lack of response compelled thus the team to reduce the assessment to a much simplified version, based on fewer overarching criteria. This also needed an important effort for re-contacting individually the stakeholders in order to convince them to answer.

#### ***IV. Facilitation and tools***

The complexity of the tasks involved, and the amount of work it represented, needed a tight planning of the work sessions, with a clear focus of each phase on achieving the goal. The facilitation techniques adapted for the different phases were reviewed thoroughly in the methodological report, as well as the skills expected from the facilitator.

The actual schedule and results of each workshop is detailed in the meeting reports which include the planned tasks, the questions raised and the production of the groups. We will not repeat here the description of proceedings, but only give an overview of the facilitation techniques suited to the most relevant tasks.

##### **1. SHP-SBG workshop 1: Terms of Reference & Methodology**

The first combined workshop was not too demanding under that aspect, being mainly aimed at explaining the process and Terms of Reference, the expected production from participants was limited to raising consensus over the sustainable development criteria (presented by the scientific team as computed from reference sources), which was easily obtained.

##### **2. SBG workshop 1: Factor identification**

The SBG-W1 full day session was instead composed of many different tasks which needed dividing the day into many phases. The output of the days consisted in:

- ❖ Deciding on a full set of factors relevant for the 2050 energy system development (including clarification of their definitions and labels) divided into four main categories
- ❖ Discussing the hypotheses of evolution and timeframe for the changes in the factor possible state
- ❖ Prioritization of the factors and selection of a core set
- ❖ Validation of the resulting set of factors to be included as central for the next step

Moreover, the agreement of participants had also to be obtained about the future steps of the process, including the matrix exercise, the Mesydel consultation and the modelling with LEAP as formalization of the scenario development.

As to be able to obtain within a short session the full list of 50 factors, it was decided to frame the work with a proposal from the scientific team, borrowed from other energy scenario exercises, as a base for discussion. The group task was thus defined as discussing the pertinence and clarity of the listed factors, and checking its comprehensiveness.

The work was organized in subgroups of participants (one group reviewing the Technological factors and Behaviours, the second group dealing with Exogenous constraints and Policy Instruments). Two facilitators were thus needed as to lead the group work in parallel. Plenary group sessions allowed to cross check the consensus on the subgroup production. The same organization was then repeated for discussing the hypotheses over the factors.

The prioritization task was organized combining individual task of allocating points to the most and less important factors, with the help of a visual large table summarizing the votes. Each participant could also explain the reason of his/her choice at the moment of making his/her choice public, which helped raising consensus and identifying dissent.

The scientific team had developed a tool for being able to compute the result of the votes in real time, within a few minutes. With the resulting selection visually shown from the result of individual votes, a discussion on the resulting set was immediately possible. This enhanced the possibility of a consensus on the comprehensiveness of the selection beyond the mere result of a vote. The hindsight on the just achieved task revealed indeed that too much focus was put on technological factors, so that social ones were consensually “rescued” from the vote process. The flexibility of the scientific team allowed extending the resulting set to 22 factors instead of the goal of 20 as wanted by the participants

The workshop eventually proved very productive, as reckoned by the participants in their informal feedback, but very work loaded for a single day.

The matrix exercise to be carried out after the workshop was well accepted as a necessary step, so was the Mesydel consultation proposal. The participants also reckoned that the overall SEPIA process was a very comprehensive and complex one.

### **3. Internet consultation: Mesydel**

The Mesydel tool needed some development as to fit the SEPIA requirements, and the team hired the needed resource as to adapt it and follow up effectively its use. It proved useful for the team expectations and user friendly. The respondents actually made use of the offered features such as possibility of resuming and/or reviewing the answers. The call for participating to the Mesydel round was accompanied with the hypotheses developed by the scientific team, based on the selection of key factors (output of the matrices analysis) and the indications given during the afternoon of SBG-W1 about possible evolutions of the factors.

### **4. SBG workshop 3: Backcasting scenario construction**

The SBG-W3 was truly the scenario workshop, where scenario storylines had to be defined from the “rough data” of factors and hypotheses selected and developed at the previous steps.

Together with the invitation to the workshop, the proposed “building blocks” were sent out to the participants as to allow familiarizing with them before the workshop. Where the aim of the previous steps had mostly been to choose and/or prioritize factors, and comment or amend proposed lists of factors and/or hypotheses, the SBG-W3 needed in fact facilitating a creativeness exercise. The choice of an intuitive approach rather than the overly complex task of checking thoroughly the consistency of every hypotheses combination meant that the participants had to imagine the scenario developing it from a starting point.

The facilitation and visual support of such an exercise are critical for reaching the objective, and a completely different set of materials (plasticised fact sheets, sets of coloured post-its for different status of the factors, multiple boards in order to keep the previous production in sight, etc.) were prepared, and the structure of the unfolding of the process was carefully organized for making sure that the creativity of participants could be expressed freely, yet keeping the direction of the work toward the expected production, which was consistent storylines, yet sufficiently contrasted from each other. An assessment of the just done job was also organized to check for contrast and comprehensiveness of the scenario skeletons.

Actually, the planned organization of the day had provided the possibility of working in parallel subgroups, in order to save time and manage the size of the groups, but the actual participation made such a plan redundant, and all the work was carried out in plenary session.

This part of the exercise proved effective and the three scenario skeletons were obtained from the facilitation helped with the material provided. Participants were also prone to have a meta-reflexion on their own production, proving thus their effective involvement in the process. This step provided a “nickname” for each scenario, which summarized what had been delineated, even without having a precise intention of doing so when starting the construction of each skeleton.

The following phase of trying to describe critical turning points in political action and/or to set time frames necessary to reach the sustainable development goals in the framework of each scenario also provided a valuable production, even if leaving some uncertainties the participants declared themselves unable to decide upon from their own field of expertise.

The last step of the work scheduled for that workshop, the attempt of quantifying some factors, proved the less successful. This is not the responsibility of the facilitator, who indeed recognized the inability of the participants to work further. They made present that they were called to decide on matters they could not effectively forecast or estimate, and that the work so far had already been demanding enough, so the session was closed with only partial answers.

## **5. SHP-SBG workshop 2: Feedback on scenario storylines and criteria**

Since the participants to the SBG-W3 had not been able to go into sufficient detail in describing the pathways related to each scenario, nor to provide precise enough estimations on key figures related to energy demand and production, the objectives of the SHP-SBG-W2 were revised, and its duration extended to a full day against the initial half day.

The participants were asked to further express themselves on the backcasting exercise with a call for assessing and enhancing the pathways worked out by the scientific team from the

SBG-W2 production. The scenario schemes, further written, had been sent out to them before, as had been the proposals for the selection of relevant sets of criteria for assessing them.

This workshop needed no new facilitation or support tools, as it was aimed at raising consensus over the critical steps of each scenario, and on the discussion of the criteria.

For the online assessment of the scenario, a structured questionnaire was developed from a survey platform, with the possibility of calling help pages (with definitions, descriptions, etc.) for each criterion and each scenario from any question where those elements appeared. The team was also in position to review the answers at any time, as well as mere connection from each participant. The functionalities did work well, but for reasons we will investigate below, the tool was little used by the stakeholders.

Overall, the team made use of many tools and techniques suited to forecasting exercises and group work, and mobilized proper skills to make them working effectively. They proved effective to their scope, and no criticism has been heard about the management of the sessions, except for the excessive workload implied over single or half-day workshops.

## ***V. Actual participation***

Aside the question of a balanced selection of expertise fields and attitudinal skills expected from participants, much concern had been expressed in the methodological report about the risk of drop-out during the participative process. Both the literature and the hearings from other teams who had conducted participative exercise had emphasized that dramatic drop out was common between the first and second meeting, and even more when a third is planned. Scenario construction being a more demanding task than mere consensual assessment, SEPIA was from the beginning in a critical position with regard to that issue. The scientific and methodological nature of SEPIA, despite its backing by BELSPO, was seen as of little help since the issue of “weighing” on actual political decision was not a feature of the research. Moreover, the political calendar meant that the “Spring of environment” initiative, directly sponsored by public authorities, mobilized many actors around a similar issue right when the SEPIA team was defining its methodology and starting to recruit experts and stakeholders. Clearly, for its nature of being much more remote from the political decision, SEPIA suffered from that simultaneity, the “Spring” having both more immediate impact on policies and more public visibility.

The discussions within the research team about that issue kept going, as the possibility of a proper retribution of participants had not been considered. The team members with experience of participating to such exercises stressed that the main incentive for participation was the seriousness of the scientific work backing the exercise, i.e. the quality of the elaborated feedback transforming the previous step output into the next step input. The reputation of the other experts attending was another intellectual incentive for the possibility of exchanging with high level profiles during the sessions.

Since no control was actually possible in advance, of course, as already mentioned above, the commitment to participate to all phases was requested to those invited.

The other measure taken for enhancing as much as possible the probability of actual participation followed the good practice mentioned in the methodological report:

- ❖ Initial personal contact with each person contacted explaining the nature of the project
- ❖ Sending out a provisional list of the experts expected, thus “spending” the names of each others
- ❖ Organizing the meetings in comfortable and easy to reach locations, especially the first one for which a room was rented in a hotel in central Brussels. The second was hold at the Fondation Universitaire, another rather prestigious location.
- ❖ Providing adequate catering
- ❖ Sending out to both the Scenario Builders and the stakeholders all the documentation at each stage of the project, which represented a kind of “newsletter” with substantial information on the proceedings

The initial response was very good. At the first combined workshop in Nov. 2008, the attendance was:

- 16 stakeholders (out of 25 invitations)
- 8 scenario builders (out of 20 invitations)

Since further 10 scenario builders had been excusing themselves for being unable to attend (and in some way the stakeholders were more concerned with the contents of that meeting than scenario builders), and another 3 stakeholders also did, we felt quite confident that response to the invitation was good and the presentation of the project had proved successful.

The first scenario builders’ workshop, in early January 2009, proved also good as far as participation was concerned, since 12 out of 20, i.e. more than those who attended the November meeting, actually showed up and proved a very good level of involvement in the work. Again, 4 more asked to be excused, and one had changed job in the meanwhile and was thus no longer in position to participate. At this second venue, participation was thus still up to good expectations.

The comments at the end of the day were good about organization and facilitation, but, as already mentioned, stressed that the work program had been heavy.

While being a rather demanding task (estimated in one and half hour for assessing cross-impact between 22 factors), and an extra one introduced during the SBG-W1 in the trade-off with the cancellation of the date of the SBG-W2, the matrix was filled by 8 experts. Considering the nature of the task and the rather short time left due to the necessity of processing the results before the Mesydel, the team felt reasonably satisfied with the participation so far.

The Mesydel consultation was launched a couple of weeks after the filled matrices had been received, which was about one week later than the theoretical date planned for SBG-W2. This is in line with the extra time taken by the matrix, after the SBG-W1. In other words, at the cost of a heavy workload, the team proved able to compute the matrix results into questions for the Mesydel within the timeframe planned between SBG-W1 and SBG-W2.

The participation to the Mesydel exercise proved also satisfactory: 10 responses were recorded (plus one asking to be excused), which showed a rebound in participation compared to the number of responses to the matrix, or a limited dropout if compared to the attendance of SBG-W1. The assessment by the team was at that stage that we were not (yet) plagued with

the typical drop out of participative exercises, thus feeling confident that the methodological choices so far seemed rather effective.

While the time schedule was very tight for the scientific team for preparing the input for the next round from the answers, on the other hand such a schedule was also expected to keep the experts involved enough in the project, since they were receiving updates and/or invitations every few weeks.

At the third workshop instead, the participation dropped dramatically and unexpectedly for the team, down to only five experts. Despite their low number, those present willingly entered into the exercise (shortly described above and in detail in the meeting report). When asked they could not indicate reasons for others failing to show up.

After that experience, an attempt to have a feedback from some experts who didn't come did also not reveal reasons linked to the SEPIA process or to shortcomings of the management at previous steps. Quite simply their professional schedule forced them to choose between several commitments, and since they had just volunteered for SEPIA, it was the most likely to be dropped. Comments were just that, despite several explanations they didn't always figure out properly how the scenarios would later be modelled and assessed, but that was not a major concern. It also came out that they were pretty used to the participatory exercises from many political or scientific bodies, to the point that some felt that it was sort of a mission for older academics to spend a substantial part of their last years as professors in "service to the community", as they see such volunteering. The issue of decision-making bodies "outsourcing" expertise was also raised. They accepted that, but with the counterpart of being free to choose the commitment if any in concurrence.

Another observation which should turn down to a certain extent a direct responsibility of the SEPIA process on the drop out is that, while the number of participants sunk for this and the following meeting, actually, some of those attending the last meeting had been absent the previous time. In other words, it is not a lack of trust or interest into the project, or plain fatigue about it, but possibly a non definitive fall in priority along time, when the experts are requested for other commitments.

There's also no relationship between the field of expertise and the participation, but for the journalists. The inclusion of journalists had been decided following a good practice mentioned in the methodological report, but only one out of two (who had initially accepted) turned out, at the initial meeting only.

The last face to face meeting, in June 2009, was attended by only 4 scenario builders and 4 stakeholders. Since it was not a date initially planned in the scenario builders' agenda, but rather a further solicitation after the SBG-W3 fell a little short on certain aspects, it is difficult to draw conclusions from the low attendance on their side. The fact that 8 of them asked to be excused seems to show that they did not just disregard SEPIA, even after the theoretical end of their direct involvement.

Instead, this was from the beginning a key date in the stakeholders involvement; and for them the low participation was really deceptive. It was also unexpected for the team, since they had had a very high rate of participation at the first meeting. Yet only 4 asked to be excused, which leaves many more plain no responses among stakeholders than among experts.

The observation is that possibly the distance of more than six months between the November meeting and the June one may have led them to disinvest from their commitment. Despite receiving regular information on the proceedings of the research, they possibly felt little concerned, or failed to understand from their remote position what was being done exactly. The weakness of having only marginal tie between the research results and any foreseeable policy decision may have caused them to feel that their opinion (which was what we needed from them since they were involved as assessors) was of little relevance.

When the stakeholders were again contacted in April 2010 with the complete description of the scenarios (storylines and comprehensive LEAP modelling) and requested to fill an online assessment questionnaire, only one answer came in out of the 25 invitations. Since the questionnaire platform allowed checking not only completed questionnaires but also passive connections, we realized that indeed a few respondents may have been discouraged by the length and complexity of the assessment, but the majority of them didn't even connect.

An extensive investigation by phone calls to either convince them to participate or elicit the reasons for not doing so revealed several profiles. It turned out that 5 out of 25 no longer worked for the organization they had been chosen to represent, and two more were in long term absence from their job. Six stakeholders had been chosen for representation of the values of political parties. Despite being willing to contribute, the fall of the government and being currently under electoral campaign compelled their agenda to an extent they could only postpone a possible participation to after the elections. As a result, only one out of those six eventually answered the shortened version of the questionnaire. Some more promised they would do, but eventually didn't.

Six declined explicitly the invitation. The reason given was mostly officially the lack of time. They included several representatives of energy suppliers (oil, gas, electricity), while the nuclear plants representative had dropped out earlier in the process. It can only be wondered if the small room for the interest they represent left alive in the framework of the sustainable development principles may have sunk their interest for the project.

In the end, only 7 responses to the short questionnaire were obtained despite intensive effort for reaching the persons individually on the phone and seeking replacement for those unable to reply.

## ***VI. Overall evaluation***

The SEPIA project, as often stressed in this and other documents, needed to rely heavily on a free willing participation of experts and stakeholders, chosen to represent the range of value sets existing among the citizens.

The complexity of a long term forecasting of energetic scenarios needed to gather a wide range of expertises, and to have them working together on a very wide set of factors including many uncertainties. The energy issues imply to some extent almost every aspect of the society development.

The project was ambitious not only for this complexity, but also for the aim of integrating the participative exercise with the econometric modelling and the assessment tools. It implied thus a large variety of tasks which, if we consider participation in a full sense, should have

been produced by the participants with only a role of secretarial work and facilitation from the scientific team.

SEPIA, as many former similar exercises, faced the limits of what can be expected from free willing experts, maybe in some more extents right because it was more demanding on them according to the ambition of the task. As a methodological research, it was aimed at testing such a design.

The level of attendance of the last workshop and for the final assessment can only be described as deceptive despite the efforts invested into the participation. However, the deception is possibly the result of the high expectation, which seemed to be met up to the Mesydel phase, and suddenly dropped.

The amount of work injected by the scientific team in complement to the room for interpretation left by the workshop production was also an aspect we had been warned about by experienced leaders of such projects.

Therefore, SEPIA certainly did not fare worse than most of the similar exercises we are aware of, considering its nature as discussed above, and it produced the expected scenarios in a way that fits exactly the planned program, if it weren't for the low attendance at the last sessions.

Since the scenarios have been produced as expected, we can just reflect on what may lack in them following this lost of participants: the question is relevant for a methodological research, yet it is only based on a few hypotheses on what could have happened.

The hindsight on some process steps might raise the following questions:

- ❖ The amount of work during the first SBG workshop on one hand proved the participants that SEPIA was a serious undertaking, but also that much was asked from them. It somehow may have raised the bar: participants needed to invest pretty much energy during the sessions they were to attend.
- ❖ Yet, we proposed an initial set of factors to start from. As far as the construction of the scenarios relied on the initial set of factors (discussed, revised and completed by the participants), it's only when looking at the result at the end of the day that they realized that they had collectively produced a set biased toward technological factors, and asked to rescue some social ones. An effect of framing is possible there, which might have affected the following steps. On the other hand, refraining ourselves from proposing a starting point would have meant an impossible workload, or needed an extra workshop, worsening thus the vulnerability to the dropout.
- ❖ Since the participants come and bring their expertise on a limited basis (i.e. agreeing to attend a certain number of meetings and answering some consultations, no matter how deeply involved they feel), it seems unavoidable that the scientific team has to fill the gaps left by the experts when they leave the workshop. It can thus not be expected that all decisions are univocally taken by the participants. The production will always be the product of interaction between the scientific team and the experts, with the balance leaning more or less on one or the other side. Since no trace of discomfort was heard at any time, SEPIA has certainly managed to hold its place on that aspect.
- ❖ Moreover, the reaction of the experts to their own production, at the end of the two workshops (of the bias in factor selection and on what they had actually drawn as scenarios rationales) proves that they were implicated enough into the task as not to see their production

from a meta level (i.e. “playing the game” instead of following some agenda) and as to feel themselves real authors of the production.

❖ Yet, working with only a fraction of the expertise selected as relevant when designing the scenario builders group means that many hypotheses have to be decided upon by persons whose expertise is not sharp on those specific topics. It could always be argued that possibly, if another expert had been present, he would have decided differently about some topics of his own field.

❖ There are possibly conflicting hypotheses about the way to reduce the drop out. On one hand, too tight a schedule make it impossible for the team to properly compute the results between two sessions, and it puts much weight on high level experts’ agendas, risking to cause more absenteeism. On the other hand, if the process is spread over a longer time span, there is the symmetric risk that the participative project drops among the everyday priorities.

❖ The assessment phase by the stakeholder had been presented to them as only marginally affected by representation principles. It meant that no proportional representation did matter, and a single opinion could, by the design of the assessment tool, weight as much as several. Yet the condition was that every relevant value set had to be represented. This was aimed at when selecting the stakes to be represented, but could not be guaranteed when only a minority of them actually responded.

In conclusion, the participative construction of energy scenarios for 2050 did produce the scenarios expected in a way that fits the initial intentions, with all the necessary adjustments to the process it needed.

The importance of building such scenarios should however be reflected into future similar projects by at least two commitments of the decider who calls for such an exercise, and which could help obtaining an actual stronger commitment, on the long term implied by the complexity of the task, from participants.

As far as experts are concerned as scenario builders, a proper retribution of their work would, beyond the financial interest, mean a contractual commitment in the process, and therefore play as an internal reminder of the commitment.

As for the stakeholder, the awareness that the opinion expressed may have an impact on future policies would raise the value of participation. A more direct commitment of political bodies should thus help in that way.

Under such conditions, a long and complex process such as SEPIA could be implemented in the real decision making world without being excessively constrained over simplifying the scenario development stages or planning over too long a time span for keeping participation.