FØDEVAREØKONOMISK INSTITUT
DEN KGL. VETERINÆR- OG LANDBOHØJSKOLE

Alex Dubgaard
Rolighedsvej 25
1958 Frederiksberg C
Tlf. 35 28 22 80/Fax 35 28 22 95
Email: adu@kvl.dk

11 April 2004

PART B

Annual Status Report 2003

Economic Valuation of the Visual Externalities of Off-Shore Wind Farms

1 Introduction

The present report is prepared in accordance with the reporting requirements set out in the agreement concerning the project "Environmental Economics Valuation of Off-Shore Wind Farms". According to the requirements the annual status report should contain a description of the programme conducted during the year, results of the surveys, statistical significance of the results, account of changes, conclusions and recommendations. As the results of the project are not expected to be ready until 2004, aspects related to the presentation and evaluation of results will not be considered as such. Instead emphasis is put on describing not only the programme for 2003 but the background for, and purpose of, the programme for the entire project period.

2 Background for and Purpose of the Project

As most other developed countries Denmark has committed itself to making significant reductions in its emissions of greenhouse gases. Increasing wind power production capacity might be an important component of the Danish reduction strategy. Presently, there are turbines located in practically all parts of the country, even though the density varies somewhat between regions. Just as the density of turbines has increased during the past couple of decades, so has the capacity and thereby the size of turbines. Consequently, the turbines that are built now have a much more dominating impact on the surroundings than the turbines built 10 or 20 years ago. The larger the turbines are, the greater are the areas in which people potentially may be bothered by visual or noise externalities generated by the turbines. Combined with the already high density of wind turbines, this implies that it is becoming increasingly difficult to find areas that are both technically and socially acceptable for the placing of new land-based turbines.

Since the scope for expanding wind power production capacity on land apparently is limited, any potential increase in wind power production capacity must be expected primarily to take place off-shore. There are both advantages and disadvantages associated with establishing wind turbines off-shore. The main disadvantage is that it is more costly both to establish and maintain wind turbines off-shore. The exact magnitude of the cost differential is not readily available as it, among other things, depends on the distance from the shore, the hydro- and geological conditions at the site, the size and layout of the farm and the size and foundation of the turbines. On the positive side it seems reasonable to expect that an off-shore wind farm will give rise to fewer and less severe externalities in terms of noise and visual obstruction than the establishment of an equal production capacity on land. Moreover, it is likely to benefit from the fact that in general there is more wind off-shore than on land.

Despite the intuitive appeal of taking wind power production to sea, off-shore wind farm projects have meet opposition both at the national and at the local level. The motives underlying the opposition may be attitudinal or psychological in character; e.g. it may be motivated by a – perhaps only temporary – opposition to change, a sense of having been left out of the decision process, a desire to express discontent with the underlying energy policy or a strong ecological conviction that the sea should remain untouched. The motives may however also be economic in the sense that the opposition may be caused by a rational concern for the biological and marine environment, actual or expected losses of amenity value due to visual externalities, reduced earnings in the tourist sector and/or declining catches of fish caused by reductions in the area available for fisheries.

The purpose of the present study is to estimate the monetary value of the visual externalities of off-shore wind farms and to conduct a cost-benefit analysis of socially optimal locations of off-shore wind farms. In the next section the basic economic theory and principles underlying the methodologies to be used will be introduced.

3 Economic Valuation and Cost Benefit Analysis

The aesthetic qualities of landscapes and recreation possibilities are goods for which no market, and therefore no market price, exists. The provision or obliteration of such goods is termed an *externality* – provided it is an unintended effect of some activity. Despite the fact that externalities do not manifest themselves in monetary terms they nevertheless represent costs and benefits that are relevant from a social point of view. Consequently, they should be included in project evaluations. A prerequisite for doing so is that the externalities are assessed in units that are comparable to the units in which other goods are assessed. In a cost-benefit analysis framework this means monetary units. The task of estimating the monetary value of non-market goods is termed *economic valuation*.

The point of departure of economic valuation is the preferences of individuals for both market and non-market goods, and individuals' willingness to make trade-offs between different goods. This

way the value of a good can be assessed as the amount of one good (often money), that the individual is willing to give up (or receive, in the case of a negative externality) in return for one unit of the good in question. That is, individuals' willingness to pay (or accept compensation in the case of a negative externality) for the good in question can be assessed. The results of a valuation study can serve as an input to a cost-benefit analysis assessing if a policy or a project represents a socially efficient use of resources. Thus, the overall purpose of economic valuation and cost-benefit analysis is to provide information to political and administrative decision makers and/or the broader public about the economic desirability of different project or policy alternatives.

3.1 Cost-Benefit Analysis

In relation to carrying out a cost benefit analysis of off-shore wind farms the analysis may be conducted at two different levels: 1) a general policy level where the desirability of pursuing a large-scale expansion of the wind power capacity is investigated; or 2) a project specific level where a given expansion of the wind power capacity is taken for granted, and the investigation is focussed on how the expansion should be implemented (e.g. the size of the farms, the location of the farms, etc.).

In the present study the economic analyses are confined to aspects at the project level. More specifically, focus will be on assessing the benefits and costs of different wind farm sizes and location of the farms at different distances from shore. It is assumed that the scale of the visual externalities is negatively correlated with the distance between the wind farm and the shore. That is, the further away the farms are the less noticeable they will be, thereby decreasing the risk that they will be perceived as visually disruptive. Moreover it is assumed that the level of visual externalities is correlated with farm size; i.e. since larger farms will occupy a greater proportion of the horizon than smaller farms they will appear visually more conspicuous than smaller farms.

Based solely on considerations related to the visual externalities it would therefore be tempting to conclude that future wind farms should be as small as possible and should be located as far away from the shore as possible. However, focusing solely on the costs (per kWh) associated with establishing and running wind farms the conclusion is likely to change. In general the costs per kWh produced increase as the distance from shore is augmented, and – at least to some extent – costs increase as farm size is reduced. Based on cost considerations the immediate conclusion would be that in general the farms should be as large as possible and as close to shore as possible.

The economic valuations and cost-benefit analysis to be conducted in the present study will seek to identify the trade-off relations between different levels of visual externalities and the costs of power generation. Thereby it will create a basis for identifying the optimal design of future wind farms in terms of the number of turbines per farm and their distance from the shore.

3.2 Economic Valuation

Valuation methods can be divided into two categories; market-based methods and survey-based methods.

3.2.1 Market-Based Methods

The market-based methods are based on the notion that individuals' willingness to pay for a non-market good can be derived from analyses of the individuals' demand for a complementary market-good. The market-based methods that could be relevant in relation to assessment of the visual externalities of off-shore wind farms are the travel cost method and the hedonic house price method.

The *travel cost* method is primarily used to estimate the recreation or amenity value of sites. This is done by utilizing information on the interrelationship between travel cost and travel frequency to a particular site. From this information an estimate can be obtained of users' willingness to pay to visit the site. In the present project the method could be used to assess the value of wind farms as tourist attractions, specifically the wind farms at Horns Rev and/or Rødsand/Nysted. However, it seems unlikely that estimates obtained would be of much relevant to future wind farm projects. This is due to the fact that - as the number of off-shore wind farms increase - the attraction value of new farms is expected to decrease. Accordingly, it has been decided not to make use of the travel cost method in the present study.

The *hedonic house price* method utilizes a well-known relationship between environmental quality and property values. In the present study the possible effect on house prices could be investigated in residential (and summer house) areas where the Horns Rev and Rødsand/Nysted wind farms are visible. A requirement for carrying out such a study is that the wind farms have been present for a period long enough to ensure that: 1) the housing market has had time to accommodate to the change in the see view; and 2) that the number of houses traded after the change is large enough to facilitate a statistical analysis of the impact on property prices. It is unlikely that the farms at Horn Rev and Rødsand/Nysted have existed long enough to support a statistically well-substantiated house price study. Alternatively, two small scale off-shore wind farms were considered as study sites (i.e. Vindeby north of Lolland and Tunø Knob east of Jutland). However, as these two farms only consist of 10-11 relatively small (450-500 kW) turbines it would probably not be relevant to carry out a house price study in these areas, as the farms bear little resemblance to the wind farms of the future. The possibilities for conducting a hedonic price study will be subjected to further investigations, and if possible a study will be carried out.

3.2.2 Survey-Based Methods

Using survey-based methods, individuals are asked to either directly or indirectly state his/hers preferences for the non-market good.

One of the survey-based method most commonly used is the *Contingent Valuation Method* (CVM), where respondents are asked to state their willingness to pay for (or willingness to accept) the good

in question. In connection to the present project, an example would be to ask the respondents how much they would be willing to pay to have a wind farm similar to e.g. the Horns Rev farm moved 20 km away from the coast compared to its present location at 14 km from the coast. The obtained WTP only applies to the specific scenario considered, and as such, the obtained WTP is very static. Thus it does not give any information on what respondents would be willing to pay if e.g the wind farm was larger or if the distance from the coast was shorter. If such more dynamic information is perceived to be important, it may be more appropriate to use a *Discrete Choice Method* (DCM), as will be done in the present study.

DCM refers to a group of survey-based methods where the value that individuals associate with goods is derived from observations of individuals' choices between different goods. The methods are based on the theory, that individuals' preferences for goods are derived from their preferences for the attributes comprising the goods. Using a DCM each respondent is presented with a set of alternatives of the good to be valued. The good is defined in terms of its key-attributes. For the purpose of the present study, the chosen attributes are the number of turbines per farm, the distance between the farm and the shore and a cost-attribute. Presented with the alternatives, which are described by varying levels of the attributes, the respondent is asked to either rate or rank the alternatives or choose their most preferred alternative. In the latter case, the more specific method may be referred to as a *Choice Experiment* (CE), and it is this method that will be used in the present study, where each respondent will be presented with three sets of two alternatives, and asked to choose the most preferred alternative in each of the three sets. The choices that respondents make between different alternatives will implicitly reveal respondents' willingness to make trade-off's between attributes/attribute levels. By analysing these trade-off's it is possible to derive estimates of the value that respondents associate with the different attributes/attribute levels. Using the CE method in the present study it therefore becomes possible to elicit values for the visual externalities associated with farms of different sizes and on various distances.

4 Survey Design

In the present section different aspects related to the design of the choice experiment will be presented.

4.1 Survey Method

The survey is to be administered as a mail delivered questionnaire. An important disadvantage of this survey format is that it often suffers from quite low response rates, which may serve to hamper the reliability of the survey. As the cover letter of the questionnaire is the first thing, which meet the respondents when they open the envelope the content and appearance of the cover letter is often considered to play an important role in relation to the recipients decision as to whether or not he/she should participate in the survey. Accordingly, significant effort has been devoted to the composition of the cover in order to improve the likelihood that recipients will find it worthwhile to participate.

The basic purpose of the cover letter is to; inform respondents about who is conducting the survey, make it clear that it is a scientific survey, introduce the background for and purpose of the survey and to clarify how respondents have been identified. The reason for providing this kind of information is to familiarize the respondents with the context of the survey and to make them comfortable about participating. It is also specified that it is important that all recipients participate no matter their initial knowledge about, or interest in, the subject. Thus, it is considered important to emphasise that people should not feel embarrassed about filling out the questionnaire due to lack of in-depth knowledge about the issue at hand. Likewise the confidentiality of all answers is emphasised; this is primarily considered important as the respondents are asked to provide quite personal information e.g. regarding income. Lastly, the letter contains contact information, and respondents are encouraged to either call or send an e-mail if they have any questions or comments.

Prior to the actual launch of the survey, the questionnaire is planned to be tested first in focus groups and subsequently through a small pre-test. These tests are intended to make sure that the questionnaire can be understood by people without any prior interest in or knowledge about the issue and to check that none of the formulations are considered offensive.

4.2 The Scenario

In 1997 the government then in office set out the objective that the total Danish off-shore wind-power production capacity should reach 4.000 MW by 2030. It is this objective that creates the context of the choice experiment used in the present study. Though it with right may be argued that this set-up is out-dated, it is nevertheless considered to be the best option as it presently represents the most tangible vision. Of these 4.000 MW specified in the objective around 400 MW has already been established implying that the expansion to be considered in the survey involves approximately 3.600 MW.

Alternatively, the survey could be based on a scenario, where the expansion is limited to concern the construction of 1 or 2 wind farms. Such a scenario would probably be more in line with what can be expected to happen within the near future considering the strategy adopted by the current government. Using such a – at least in comparative terms – small-scale scenario could however create severe problems in relation to deriving meaningful estimates of peoples' willingness to pay for reducing the visual externalities associated with the wind farms. Hence, unless the considered expansion is quite large it is unlikely that the expansion – no matter how it takes place – will have a significant impact on the cost of electricity production as such. That is, even if the most expensive type of farm is chosen over the cheapest, the extra costs incurred by this choice are likely to be so low that they, once they have been distributed across all households in Denmark, will be insignificant.

Thus, using a small-scale expansion scenario a irreconcilable conflict arise between 1) the wish to create a scenario where the costs used in the survey reflect the realistic level of anticipated costs, and 2) the need to have a significant cost variable. If the former consideration is granted highest

priority, the relative level of the costs attribute with which the respondents are faced will be low. This may imply that respondents will be indifferent between the cost-attributes of different alternatives, and that they therefore will disregard the cost-attribute when making their choices between alternatives in the choice experiment. If something like this happen it may prove very difficult, if not impossible, to identify the weight that respondents attach to costs. Subsequently, it will be difficult, or impossible, to derive reliable and valid estimates of respondents willingness-to-pay for reducing the visual externalities of off-shore wind farms. On the other hand, if securing the significance of the cost attribute is granted the highest priority, then one run the risk that respondents reject the scenario, or that they do not consider it worthwhile to answer truthfully, because they perceive the scenario to be unrealistic. Moreover, the relevance and thereby also the usefulness of the results may be jeopardised, as the obtained information does not relate to reality. In order to avoid problems as the ones described above we have chosen to operate with a very large-scale expansion, which allows us to maintain a realistic correspondence between the costs used in the scenario and the costs that would be anticipated in reality, while also making it possible to use a relative price level that is likely to be significant for respondents.

In the two existing large-scale off-shore wind farms at Horns Rev and Rødsand/Nysted turbines with a capacity of 2-2,3 MW has been used. As the considered expansion will not proceed until sometime in the future it is expected that the relevant type of turbine will have a significantly larger capacity than those that currently are used. Exactly how large the turbines will be cannot be said with certainty. In lack of more specific information it is chosen to operate with a turbine size of 5 MW. Compared to the turbines used today this represents a very large turbine. However, in light of the speed of technological development within the field of wind-power production it does not appear unrealistic that turbines with a capacity of 5 MW will be a reality within a foreseeable future. Presently, 5MW turbines are in fact beginning to move from the drawing-board and out into the real world for testing.

Undertaking a total expansion of approximately 3.600 MW with 5 MW turbines require that around 720 turbines have to be erected off the Danish shores. In terms of specifying where the wind farms are to be located, it was considered to use a map from a report made by the Danish Energy Authority in 2003. The map shows areas that have been designated as potential areas for the location of off-shore wind farms. However, for several reasons it was decided not to include the map. For one, the map could potentially create more confusion than clarification as it does not depict exact locations. Secondly, it is expected that denoting specific (but nevertheless still hypothetical) locations could cause unnecessary – and in particular unwanted – furore. Consequently, the only thing mentioned in relation to location is that considerations related to the surroundings, including both the landscape and animals, will play a prominent role.

4.3 The Attributes Defining the Alternatives

One of the advantages of using the choice experiment method is that the joint focus on all the attributes comprising a good rather than on a specific good per se makes it possible to obtain a more

nuanced and dynamic picture of people's preferences for the good subjected to valuation. Also, provided that the attributes chosen to describe the good are policy relevant, it increases the likelihood that the obtained results will serve as important input in the planning of how to conduct the expected expansion of the off-shore wind power production capacity.

In the present study, the choice experiment is designed to facilitate the distinction between two different attributes that are believed to have a significant influence on the level of visual externality associated with off-shore wind farms while also being of policy relevance. These two attributes are the number of turbines per farm and the distance between the farm and the shore. In addition to these two attributes, each alternative is also defined by a cost attribute in order to facilitate the derivation of a monetary estimate of peoples' willingness to pay to reduce the visual externalities associated with off-shore wind farms.

In terms of the number of turbines per farm it is chosen to operate with 3 levels; 49 turbines, 100 turbines and 144 turbines. The apparently odd numbers are due to the fact that all farm sizes need to fit a quadratic farm-layout in order to ensure similar appearance of the farms. The three farm sizes have been chosen to reflect the interval that are of primary relevance in relation to the desired capacity of future farms. With reference to the fact that the overall scenario specifies a total expansion of 3.600 MW, the different farm sizes are tantamount to different numbers of farms. If it is chosen to operate with farm sizes of 49 turbines, it will be necessary to establish around 15 farms in order to attain the overall objective of 3.600 MW. For 100 and 144 turbines per farm the corresponding number of necessary farms are around 7 and 5 respectively.

In terms of the distance between the farms and the adjacent shore it is also chosen to operate with 3 different distances; 8 km, 18 km and 50 km. Originally, 12 km was also included, but the difference between 8 km and 12 km, and 12 km and 18 km, appeared insignificant on the visualisations. Therefore, the 12 km distance was dropped. The shortest distance is chosen to represent the absolute minimum distance that would be considered when locating farms, and the longest distance is chosen to specify the distance where the farm no longer is visible from shore. If focus solely is on visual externalities, then the latter situation corresponds to the situation where there is no farm; that is, it represents a situation where there are no visual externalities from the farm.

The cost attribute is stated in the form of an annual "renewable energy"-fee to be paid by each household over the electricity bill and has 6 different levels. The more specific levels, however, are not decided upon yet, as we still lack information on the relevant cost spectrum. Originally, it was planned to use changes in the electricity price as cost attribute. This choice was based on the expectation that the electricity price would represent an intuitively understandable and uncontroversial payment-vehicle. However, in relation to the interpretation of results, and aggregation of willingness to pay estimates, it was somewhat problematic, just as it made it difficult to make a comprehensible presentation of alternatives.

Apart from the chosen attributes, other potentially relevant attributes have been considered; the type of coast, which the farms would be situated at and the layout of the farms. The former was considered as the extent to which a given wind farm is perceived to have a negative impact on the amenity value of a coastal area is likely to depend on the initial amenity value of that area. As an example, a wind farm is likely to be perceived to be more visually obstructive in an area characterised by untouched natural and scenic beauty (e.g. the area at Møns Klint which has been suggested as a potential location for future off-shore wind farms) than in an area where other man-made installations already are present (e.g. Middelgrunden just outside the Copenhagen harbour where an off-shore wind farm already has been established). Despite this potentially important relationship between the type of coast, where a wind farm is situated, and the level of associated externalities, this aspect is left out of the analysis as it proved impossible to present in a meaningful way. The layout of the farm was considered as it is likely to affect the visual appearance of a farm of a given capacity. As an example, a farm consisting of 100 turbines in 2 rows along the coast is likely to have quite different visual impact than a quadratic farm also consisting of 100 turbines. That is, the former will affect a much larger proportion of the horizon than the latter; the latter, however, is likely to have a more dominating impact – i.e. it may be perceived as a dense forest of turbines- on the part of the horizon that is affected. Despite this potentially important effect of layout on the visual effect, statistical and practical considerations related to the visual presentation of alternatives imply that it is chosen not include layout as an attribute. Instead it is chosen to operate with a "standard farm" with a quadratic layout, which – as far as we have been informed- in most cases represents the technically most relevant layout. Finally, aspects such as the colour of the turbines, site specific weather conditions and in particular the presence of light-markings may have an important bearing on how the wind farm is perceived from the shore. No doubt it would be both interesting and relevant to include such aspects in the analysis. However, this is not possible in a quantitatively oriented survey as the present.

4.4 Sample Populations and Sample Sizes

The questionnaire is to be mailed to a total of 1.400 respondents, consisting of three sub-samples. Two sub-samples of each 350 respondents will consist of randomly chosen persons between the age of 20 and 65 years from the areas in the vicinity of the Horns Rev wind farm and the Rødsand/Nysted wind farm respectively. Compared to the Danish population in general, the populations in these two areas are expected to have much more well-defined and well-articulated preferences for off-shore wind farms. That is, in the course of projecting/planning and constructing the now operating wind farms, they have been through a long "learning/familiarisation" process. A process that is likely to imply that they have spent more time reflecting upon both the advantages and disadvantages of large-scale off-shore wind farms than other Danes. Accordingly the populations of the areas in the vicinity of Horns Rev and Rødsand/Nysted are of particular interest in relation to the identification of valid and stable preferences for off-shore wind farms.

In connection to the two area specific samples it is interesting to note that it most likely will be erroneous to assume that the populations of the two specific locations have been through identical

processes just because they both have had to come to terms with the fact that an off-shore wind farm have been established close to their home. Therefore it will presumable be erroneous *a priori* to assume that the output of the two processes – i.e. the resulting attitudes and preferences of the affected populations – will be identical. With this in mind, it is considered to be not only very interesting but also highly relevant to compare the results of the identical surveys conducted in the two different areas. Thus, in combination with the results of the sociological studies that are also conducted in both areas, a unique opportunity is created not only for identifying differences and similarities but also for gaining an insight into the relationship between process and creation of attitudes and preferences.

The remaining sub-sample will consist of 700 respondents who are randomly selected from the Danish population aged between 20 and 65. This sample should reflect a representative cross-section of the Danish population and it serves two purposes. For one, it is intended to serve as a reference for the interpretation of the results from the two location-specific sub-samples. Secondly, it will serve as the basis for the derivation of aggregate willingness to pay estimates. Thus, apart from uncovering the preferences of people with prior experience with off-shore wind farms – represented by the two location specific sub-samples – the survey is also intended to provide information on the attitudes and preferences of the Danes in more general terms. In this respect the present study distinguish itself significantly from the sociological part of the project, where focus is on disclosing the full extent of the spectrum of attitudes, along with the origin of different attitudes. Hence the focus of the present study is centred on quantifying the prevalence and welfare economic implications of different attitudes, among others some of the attitudes, which were identified in the sociological study.

Lastly, it is noted that the difference in sample-sizes between the national and the two location specific samples is motivated by the expectation that people living close to the existing wind farms (due to greater exposure to the off-shore wind farm debate) will be more inclined to participate in the survey. Accordingly it is expected that significantly smaller sample-sizes will be sufficient to secure a satisfactory number of responses. In this connection it may be noted that it – for the chosen sample sizes - even with response rates as low as around 25% probably will be possible to estimate reliable models for all samples. However, such low response rates are neither desirable nor expected. Hence, experience from other surveys suggests that response rates around 50% can be expected. This is not as high as the response rates advocated by some, but for most practitioners it will be very satisfactory.

5 Results of the activities during the past year

In the following sections, a brief account will be made of the status of the project compared to the original schedule for the project.

5.1 The questionnaire

According to the original schedule for the project, the questionnaire was planned to be launched in the beginning of December 2003. Subsequently the typing of data and the statistical analyses were planned to start in January 2004. However, during the fall of 2003 it was decided to postpone the launch of the questionnaire until primo 2004. Subsequently, the goal for 2003 became to complete the focus group interviews and pre-tests.

The development of the questionnaire can be divided into two parts. One part concerns more general questions regarding the socioeconomic characteristics of the respondents and questions used to identify the respondents' attitudes towards energy production, wind turbines and especially off-shore wind turbines. The process of developing this part of the questionnaire has been rather smooth. The second part concerns the choice experiment and turned out to be a quite contentious issue. The reformulation of the valuation experiment, where site-specific scenarios were replaced with a generic scenario assuming a large-scale expansion of off-shore wind power capacity at the national level, proved to be both intricate and time consuming. Also, finding appropriate formulations, retrieving information on construction and maintenance costs, and obtaining the visualizations all took significantly more time than expected. Accordingly, it was not possible to get the questionnaire ready for testing by the end of 2003.

5.2 The Hedonic House Price Method

According to schedule the house price study has been initiated in 2003. Screenings for suitable study-sites have been carried out and potential areas were identified. Presently it is, however, not clear if these potential areas in fact represent suitable study-sites (c.f. Section 3.2.1). Thus, there are presently some uncertainties regarding the feasibility of conducting a house price study of the visual externalities of off-shore wind farms. In order to determine this, it will be necessary to conduct more detailed investigations of the number of houses affected by the wind farms and the number of house sales in the areas. Studies seeking clarification on these issues include consultations with GIS-experts and real-estate agents, and are planned to commence in January 2004.

6 Conclusion

By now – the beginning of April 2004 – the project is delayed by about 6 months. The main reasons for this are the unexpected high resource demand related to the development of the choice experiment questionnaire along with the fact that important information from external sources was delivered with considerable delay – i.e. in late January 2004. Subsequently, testing of the questionnaire in focus groups could not be conducted until mid-February 2004. Presently, pre-testing in a sample of 40 respondents is ongoing. Depending on the extent of corrections that need to be made following the pre-tests, the actual launch of the questionnaire is expected to take place fairly shortly after the pre-test participants have returned the questionnaires. In this connection it may be noted that it is anticipated that some of the delay can be made up for by putting in some

extra time in the months to come. However, it must be expected that the project at least to some extent will continue to be behind the original schedule due to the delays that have arisen in 2003.