TERMS OF REFERENCE FOR BIOGAS EXPERT TO SUPPORT VECAUCE RESEARCH AND TRAINING FARM TO PLAN IMPROVEMENTS AND EXPANSION OF THEIR BIOGAS PRODUCTION

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<th>Subject</th>
<th>Description</th>
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<td>Person</td>
<td>To be selected by balticCOMPASS and Vecauce Research and Training Farm in cooperation according best (combination of CV and price) of at least three offers. The expert must have a proven track record in biogas feasibility studies, insight into biogas technologies, knowledge to substrates for biogas production, and English language skills.</td>
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Tasks

1. Since maize silage is more profitable and necessary for use as feed in the dairy production, there is a wish to analyse the possibility to use solid manure types with straw instead, and also straw alone, as substrate in the biogas production. It shall be clarified which amounts that are available, and the optimal technological setup and necessary changes in the daily operation of the biogas plant. The final recommendations must include technologies, investments and economy.

2. Not all the heat from the biogas CHP unit is presently used, while in the same time it is possible the biogas production will be expanded in the future. One option is to use some of the biogas for heating of nearby houses in Auce village, today heated via district heating from a local heating plant. It is necessary to investigate the possibilities, optimal technological solutions, organisation and economy in use of the heat from the biogas plant.

3. Needs for storage facilities for the biogas plant in combination with the livestock production shall be evaluated, also with respect to the scenarios for use of solid manure types with/and straw, and for possible expansion of the biogas production, in order to secure sufficient sizes of the stores and an optimal logistics and connected techniques and solutions.

4. It is further envisaged that the feasibility of use of waste water treatment sludge from the nearby treatment plant as substrate in the biogas production is investigated. It shall especially be clarified how the logistics can be organised, how it affects the economy, and whether any changes in the technological configuration of the biogas plant would be required.

5. Finally it must also be evaluated, how the biogas production could be expanded to a size that would fully utilise livestock manure form a fully expanded livestock production on Vecauce Research and Training Farm.
In general the feasibility, including technologies, investments and economy, of a number of scenarios, including those mentioned above, must be analysed and ranked with respect to relevant criteria as overall economy, risks and complexity. All analysed scenarios must include an assessment of the environmental impact effect, especially with respects to the loss of nitrogen.

Input

Minimum 4 working days in Latvia, here under
- 1 day travel to Latvia, including the consultants own preparation and briefing by the Vecauce Research and Training Farm;
- 1 day inspection of the present biogas plant, the district heating, the waste water treatment plant, etc.
- 1 day with consultants feasibility calculations and drafting report.
- 1 day with de-briefing and return travel. As part of the de-briefing the consultant must propose a commented table of content of his report for approval, and outline his recommendations.

Maximum 5 working days for drafting and finalising the report with presentation of the scenarios, the ranking and the recommendations.

Timing to be decided, preferably Autumn 2011.

Consultants offer must include travel costs, including local travel, and expenses for food and accommodation.

Deliverable

Report that presents the consultants recommendations concerning the above tasks. The draft report is delivered latest two weeks after the visit to Latvia. Baltic COMPASS, represented by Agro Business Park, and Vecauce Research and Training Farm would then have two weeks for commenting and the final report must be delivered at the latest six weeks after the visit to Latvia.

All reporting is made in electronic form.

Payment

Payment is made within two weeks after approval of the final report.

Other information

Baltic COMPASS / Agro Business Park will join the consultant on the visit to Latvia, and parallel with the consultants work draft a general pamphlet on the methodology for biogas feasibility studies.

It is expected the consultant as part of his preparations will study the reports:

- BIOENERGY TRAINING CENTRE DEVELOPMENT IN LATVIAN AGRICULTURE UNIVERSITY TRAINING AND RESEARCH FARM „VECAUCE”
- Market Description - the environmental technology and bioenergy sector in the Baltics