

The purpose of organising test and verifications activities of environmental

Thanks to all for their cooperation and contribution

I would like first of all to thank you for taking part in this stakeholder meeting. I would also like to thank the Dutch Ministry of Housing, Spatial Planning and the Environment (VROM), and the German Association for Technology and Structures in Agriculture for their willingness to engage in this project and all the experts who have contributed to this project.

Introduction to the VERA project and the stakeholder meeting

The name of the project we will present today is “Verification of Environmental Technologies for Agricultural Production’. As an acronym for the project we have chosen VERA which in Latin means truth. And that is exactly what we hope to realise. Truth in terms of mutually accepted documentation of effects.

VERA has two central goals. The first goal is to develop internationally recognised test protocols for test and verification of different environmental technologies. The project has so far focused on developing test protocols for the following areas:

- Housing systems and techniques applied in housing systems
- Air cleaners
- Covers for slurry containers
- Manure separation technologies
- and Manure application technologies.

The second goal is to develop an international organisational framework to facilitate and coordinate international test and verification activities.

I am amazed by the progress we have achieved in the project in a relatively short span of time. After initial analyses and preparations the project was initiated with a kick off meeting in July 2008 where different experts from the Netherlands, Germany and Denmark sat down

and started to discuss how to design test protocols for the different technologies.

Since then the development of the different test protocols have gone on with meetings each month, and dedicated work between the meetings.

The work on the test protocols has now come to a state where we would like to present them and evaluate. March 20th the protocols were emailed to people and organisations which had already at this time subscribed for this stakeholder meeting. At the same time the protocols were published at www.ecoinnovation.dk where every body is invited to comment on the draft version of the five test protocols. Consulting different stakeholders is a central element in optimizing the protocols and verification activities within the VERA project, and we hope to get positive feedback from you and other stakeholders.

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The structure of this presentation

In this presentation, I would like *first* to identify the sources of pollution in the intensive livestock production. *Secondly*, I would like to make a small investigation into the global demand for environmental technologies for agricultural production. Thirdly, I will talk about the role of an Environmental technology verification scheme in creating a market for environmental technologies for agricultural production. And finally, I would like address possible ways of widening internationally the coordination of test and verification activities.

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Central sources to environmental pollution in the intensive livestock production chain

The first slide I would like to present is an overview of central sources to environmental pollution in the intensive livestock production chain.

As it is displayed ammonia, greenhouse gasses, and odour are emitted from the housing system, slurry containers/heaps and through the application of manure. And manure application result in nitrate leaching and erosion of phosphorous and micro-nutrients (heavy metals (Cu, Zn....))

Environmental technologies for agricultural production can reduce the emission from these different sources in the production chain by reducing material inputs, emission of pollutants, energy consumption, recover valuable by-products and minimize waste disposal problems. Environmental technologies can therefore enhance the eco-efficiency of the livestock production.

The test protocols under development will eventually be used to test and verify technologies that can be used to reduce the pollution from the displayed sources of pollution. How exactly this is done will be presented in the subsequent presentations.

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The next slide shows the distribution of the global livestock production. Areas marked with red are dominated by intensive livestock production.

This production is primarily located in areas with high population density and purchasing power. The production is at the same time often located in costal areas in the eastern part of North America, Europe, and East Asia where access to imported feed is easy.

The map also shows large concentrations of intensive livestock production located in areas with easy access to plenty amount of locally produced feeds.

Though in some countries the livestock production I currently marked by the global recession, the red areas can be expected to increase in intensity in the years to come. And that is for two central reasons.

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Increase in global demand for livestock products

The first reason is that we will see an increase in global demand for livestock products. Demographic factors such as bigger populations, age structure and urbanisation affects the demand for livestock products.

Growing economies and income levels also increase the demand for livestock products.

Fewer and bigger livestock production units utilizing economies of scale

The second reason is that we see the same structural changes in the livestock sector in all countries: Fewer and bigger livestock production units utilizing economies of scale. Thus, the production becomes more intensive and vertically integrated.

In terms of demand for environmental technologies this development means that bigger sections of the population and habitats are affected more intensely by the livestock production, but also that the economic and technical potential for applying technical solutions to mitigate these impact are growing enormously.

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Government policy: a central driver behind the demand for environmental technology

However, a growing global intensive livestock sector, will not create a global demand for environmental technologies alone. Government environmental regulation will inevitably be a central driver.

One of the partnership project we are currently facilitat-

ing in the Danish EPA – the so-called manure technology partnership - has initiated a study that analyses the policies regulating the intensive livestock production in countries with large shares of the global intensive livestock production. The analysis focuses on:

- USA/Canada
- EU (15) and a number of east European countries
- Brazil/Argentina
- India
- China and other East Asian countries.

Perhaps not surprisingly, the study identifies USA/Canada and the EU as the regions, where policies have been implemented that already have or are expected to create a demand for environmental technologies for agricultural production.

In the EU the Nitrates directive, the Natura directives, the water frame directive, the National emission ceilings (NEC), and various climate policies have already created a demand, or are expected to do so in the near future.

Some of the demographic factors that create a higher demand for livestock production are at the same time expected to create a demand for high environmental standards. In the near future policies can therefore also be expected to be implemented in the other countries included in the study.

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Why test and verification?

Now, why test and verification? It might be truthful but is it useful?

An industry providing technological solutions to the environmental problems of the intensive livestock farming sector is emerging in several EU member states.

This industry is generally characterised by small and medium sized companies which provide technological solutions to the livestock farming sector in the countries they are located in.

Like any other emerging industry, this industry is up against the problem that central stakeholders only have limited information on the performance of these techniques. This hampers the development of a market for these technologies. It means that:

- Farmers hesitate to invest in the new environmental technologies for agricultural production
- Authorities are reluctant to approve that farmers use these new technologies as a part of the environmental solution in their livestock production
- Investors hesitate to invest in companies that have develop new promising livestock technologies

So, the answer is a clear yes: Test an verification is useful in creating a transparent market for new technologies

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Why international coordination of test and verification activities?

Basically, the goal of VERA is to fill this information gap of central stakeholders by offering independent verification of the environmental technologies' performance based on specific test protocols. Thus, VERA will provide reliable and comparable information on technologies that can be used by:

- **Farmers and advisors** to identify the best technology solution for a production in order to meet different environmental targets and therefore as a sound basis in their investment decisions
- **Technology producers** to sell their technologies

not only on a national market but on an international market, too

- **Authorities** in developing regulation that can fulfil the environmental targets at the lowest costs and in the practical enforcement of environmental policies in connection with environmental approvals and inspections of farms.
- And finally, **Investors** to assess investment opportunities in the cleantech industry.

But why should we set up a scheme that coordinates test and verification activities? Several countries already have test and verification or certification schemes for different types of technologies. I would like to answer this question by presenting the experiences the Danish company SKOV have had entering different national markets. [no family affiliation]

Since the new millennium SKOV has developed and produced biological air cleaners for intensive pig production. Each time the company has entered a new country with its product, it has been required to document the product's environmental performance by the relevant authorities.

The procedures and test requirements have differed from country to country. So far the company has therefore been involved or is involved in different test and documentation activities in Denmark, Belgium, Japan, the Netherlands, and in Germany.

In average, the company estimates it takes 2 1/2 years to acquire the necessary test results and documentation in the different countries.

A central goal of VERA is to coordinate the test activities taking place in different countries so that the resources of companies such as SKOV can be focused on developing new products rather than testing the same products under different schemes and protocols.

A scheme that internationally coordinates test and verification activities will facilitate the development of a common market between different countries. This will benefit environmental technology producers, the agricultural sector and not at least the environment. VERA will therefore also be established with an open invitation to other countries and organisations to join.

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Possible ways of widening internationally the coordination of test and verification activities

Hopefully, other countries and organisations will join the scheme to broaden the coordination of test and verification activities to other countries. We feel that we have taken an important step with VERA, and that we have created a flexible and pragmatic framework that can be adopted in many national contexts while still achieving the goal of increased market transparency.

We also see some future perspectives for VERA.

The planned EU Environmental Technology Verification scheme expected to be implemented in 2011 is very interesting in relation to VERA. The EU ETV scheme is expected to be an effective way to broaden the coordination of test and verification activities to other EU member states and possibly the US and Canada where similar verification schemes are already in place. The organisational concept of VERA, which Bas Knuttel will present subsequently is at the same time similar to the planned EU ETV.

[In relation to the planned EU ETV it has been suggested to set up different thematic verifications centres for water-, soil-, air pollution and so on. Environmental technologies for agricultural production can often mitigate several of the environmental problems at the same time. Therefore, find it worth considering whether agrienvironmental technologies should be a theme in itself.]

Another perspective is to try to make the test protocols accepted as standards by the European Committee for Standardization (CEN). In this way the test protocols can be used by the existing standard and certification system. This, however, can take a long time.

There are a number of ways of widening the coordination of test and verification in the coming years. VERA is ready to be used now, and we hope you will give it a warm welcome. We would also like to hear your views on the perspectives on the organisational framework of the protocols on a short and long term.

Thank you for your attention.