

‘Green Label Greenhouse’ and energy-saving policies in the Netherlands

Elly Nederhoff

CropHouse Ltd, New Zealand

Elly@CropHouse.co.nz

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Some growers in New Zealand have heard about the ‘Green Label Greenhouse’ in Holland and wonder if this is useful for New Zealand growers. This article in this series on ‘*Energy saving in greenhouses*’ deals with initiatives in the greenhouse industry in the Netherlands. The Dutch have extremely strict environmental laws in place to regulate energy use, agrichemical use and nutrient (fertiliser) emission. No doubt these strict rules are frightening for growers there and here. The good thing about the Dutch schemes is that they provide rewards for good achievers, such as subsidies, tax deduction, investment support, reduced interest rates (all mostly paid by money from the growers). The purpose of this article is to briefly describe the Dutch approach and perhaps trigger some ideas.

Energy saving in Holland

The Dutch greenhouse industry has a long history of energy saving. It started after the first energy crisis in 1973, and is still very intensive in 2004, now motivated by the Kyoto protocol. The Dutch have focused on improving the energy efficiency, which means using less fuel per kg of tomatoes (or producing more tomatoes per unit fuel). Nearly all Dutch growers use natural gas, and they also use gas for CO₂ enrichment in summer. The introduction of CO₂ enrichment in the 1980s and 1990s meant that fuel consumption did not dramatically decline, but the production increased considerably. Hence the energy efficiency improved by 44% between 1980 and 2000. However, the government found that 44% improvement was not enough, and much stricter rules are put in place now for the coming years.

New requirements from the government

On 1 January 2002 a new bylaw came into force for all greenhouses of over 2500 m². It is known as AMvB (‘Besluit Glastuinbouw’). It is based on three other laws and incorporates a covenant signed in 1997 between the industry and the government. It defines the amount of energy, nutrients and agrichemicals that a grower is allowed to use. Every grower is responsible for achieving personal targets. The overall goals for the greenhouse industry is that by the year 2010:

- a. energy efficiency is improved by 65% compared to 1980
- b. the contribution of sustainable energy is increased to 4%
- c. agrichemical use is reduced by 88% compared to 1984-1988
- d. phosphate and nitrate emission are reduced by 95% compared to 1980

Recording and reporting obligations

The new law demands growers to do a lot of recording and reporting. It starts with producing a growing plan by 1 November each year. Based on this, the government tells the grower how much energy, fertiliser and agrichemicals can be used. The permitted amounts are reduced every year in order to accomplish the goals by 2010. Each grower has to keep records in a book, which must be kept for at least 5 years. Each grower has to report every four weeks and also present an annual report by 1 May. In the near future the four-week reporting obligation will be dropped, and instead the focus will be on the recording book, the annual reporting and an environmental folder with all relevant documentation. Understandably, the compulsory recording and reporting is an enormous burden on growers.

'Green Label Greenhouse' and other schemes

There are several systems available that a grower can use for the compulsory recording and reporting on environmental and energy issues. Other systems are available to assist with calculations and administration. One system that some growers in NZ are interested in is called 'Green Label Greenhouse'. This is an administrative tool for environmental paperwork when planning a new greenhouse or renovating an existing one. Green Label helps demonstrating to the government that the new greenhouse will be environmentally friendly. The focus is on energy efficiency, but it also includes plant nutrition and crop protection. If the plan meets the criteria, the grower receives a Green Label Greenhouse Green Certificate (in short: Green Label Certificate). This certificate gives access to incentives (see below).

Requirements

There are general legal requirements for greenhouses that always must be satisfied. On top of that the Green Label scheme defines (a) basic requirements that must be met too, and (b) options for investments, for which the grower get points (see below). The basic requirements prescribe details for construction parts, walls, roof and gutter. Other compulsory basic requirements in heavy-heated greenhouses are a climate control computer with accurate sensors for temperature, humidity and CO₂. The heating must fulfil detailed criteria too, and there must be some biological control. Interestingly, it is also compulsory to use the CO₂ from the flue gas from the boiler.

Options to gain points

In addition, the grower can choose options, i.e. installing energy saving equipment such as thermal screen, condensor, insulation on boiler or pipes, heat buffer, waste heat from an external source, etc. Each option gives a number of reward points. Points can also be gained for investments for improving water and nutrient management or for reducing agrichemicals usage. The grower can focus on one or several aspects. The number of points required to obtain a Green Label Certificate is 110 for a tomato greenhouse; 100 for other heavy heated greenhouses, and 85 for greenhouses with light heating or hot-air heating. The options, and the number of point for each option, are described in a long table with many technical details (see <http://www.milieukeur.nl/> in Dutch).

Rewards

If enough points are earned, which means that the level of planned investments is sufficient, the grower receives a Green Label Certificate for the greenhouse. This entitles the grower to rewards or incentives, known as MIA, VAMIL and Green Investments. MIA is a tax deduction for investing in environment-friendly production equipment. VAMIL offers businesses advantages in liquidity and interest. Green Investments assist with environment-friendly investments. These rewards are considered very worthwhile. Apparently there are also punishments for not achieving the set goals. It is possible for a grower to apply directly for tax incentives (without using the Green Label Greenhouse scheme), but then he has to do the research and paperwork himself.

Registration and management

Growers can register for Green Label by filling in an (extensive) form. A copy of the form must be sent annually to the controlling authority. During building and after completion the new greenhouse is assessed by an independent authority that is acknowledged by the Council for Accreditation. The management of the Green Label Greenhouse scheme is in the hands of an organization (SMK) on behalf of the Ministry for the Environment (VROM). Decisions are made by a Committee of Experts. The grower has to pay a fee of a couple of hundred Euros to use the Green Label scheme.

Green Label Greenhouse and the law

This article has attempted to briefly describe how, in the Netherlands, Government's directives are often coupled with incentives. The compulsory improvements and the paperwork required by the government form a large burden on the Dutch growers. However, achievers are rewarded (and probably non-achievers will be punished). The result is stimulation of innovative investments and ultimately achievement of environmental goals. The Dutch government has had several of such incentive schemes over the years.

The Green Label Greenhouse is a system that growers can use to assist in the compulsory paperwork and reporting to the government. Further this system assists growers in getting rewards in return for investments. It aims at encouraging growers to accomplish world's best practice for energy saving and environmental improvements.

Suggestions for NZ growers

Perhaps some ideas can be taken from the Dutch approach, for if Carbon Tax becomes reality in NZ. For example:

1. Aiming at improving energy efficiency rather than reducing energy consumption. Energy consumption across the whole industry is not a sensible indication, because the industry may grow or shrink over the years. So one option is that energy must be related to area, expressed as MJ/m²/year. Moreover, it makes sense to compare this to the yield, expressed as kg/m²/year. Even better is to consider the ratio between energy and yield, i.e. the energy efficiency, expressed in MJ/kg or kg/MJ.
2. Data recording and benchmarking. The industry may want to demonstrate improvements in energy use (or energy efficiency). This requires data. Improvements can only be demonstrated by comparing current data with previous data. Hence the industry should start recording data on energy and production now, to be used as benchmarks in the future. It is important to use standardised methods, and to be prepared to make essential data available.
3. Incentives. People are more motivated to strive when there is a reward at the end. Over the years, the Dutch government has put many strict laws and policies in place, often accompanied by (tax) incentives (see <http://www.vrom.nl/>, in Dutch). These are rewards that can be earned for achievements. The money involved in the incentive schemes usually comes from levies and tax paid by the same industry. The result is that the industry as a whole advances, and that industry goals are accomplished.

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