

# NVDE: options for less fossil energy and less energy dependency

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**The Netherlands is in the transition phase from a lot of 'orange-grey' energy (domestic natural gas) to a lot of 'orange-green' energy: self-generated renewable energy. Especially in the current intermediate phase, our dependence on energy imports is high. Accelerating the energy transition is the best response. Some measures will have impact within a year; more structural measures still have a lead time of several years, even with accelerated application. Therefore, depending on the geopolitical situation, temporary emergency measures may be necessary.**

In this memorandum, the Netherlands Association for Renewable Energy (Nederlandse Vereniging Duurzame Energie - NVDE) elaborates on several options for the short and the longer term. For each measure, we provide an indication of the reduction in natural gas consumption resulting from that measure (expressed in billion cubic meters (bcm) of natural gas). This list is not exhaustive, but it does provide important solutions. Existing climate policy is already heading in the right direction, so it often involves acceleration of this policy. Climate policy aims to reduce CO<sub>2</sub> emissions, this memorandum focuses on reducing Dutch gas consumption. There is a lot of synergy between the two, but they are not the same. There are important reasons to incorporate these measures as soon as possible:

1. To strengthen our energy independence;
2. To reduce Dutch funding for Putin's War Machine;
3. To reduce energy costs, both directly (less consumption) and indirectly (lower demand leads to lower prices);
4. To accelerate the reduction of greenhouse gas emissions.

## Energy savings in the industry/business world

**1. Thermal insulation industry:** This energy saving measure is relatively simple to implement and already has an excellent business case. The potential for CO<sub>2</sub> reduction is 2.7 Mton according to VNO-NCW, which equals 1.5 bcm (billion cubic meters) of natural gas.

**2. Urgent check on implementation of the Dutch Environmental Management Act** ('Wet Milieubeheer'): this is an existing obligation that is complied with to a limited extent. All energy-saving measures with a payback period of less than five years are mandatory. In addition to the 'stick' of control, we advocate linking to a savings service for companies with analyses, referral to solutions and help to bundle demand (for efficiency and lower costs). According to [TNO](#), the potential of this measure for industry and the service sector is 1.2 Mton CO<sub>2</sub>, which we believe is about 0.8 bcm of natural gas. The effect can be increased by extending the requirement to a payback period of seven years and by extending the obligation to include generation (e.g., solar power, heat pumps). Moreover, the obligation to save energy can also be extended to companies that are not currently covered in the system (larger and smaller companies).

**3. Better regulation of heaters and electrical installations**, for example also in schools and hospitals. Do not put the boiler too hot, turn off heating and lighting when no one is there. Significant rapid savings are possible here, at very low costs or even with immediate returns. See [De Ondernemer](#) (The Entrepreneur) about this. Regarding the Climate Agreement, [PBL](#) (the Netherlands Environmental Assessment Agency) has already calculated that a reduction of 2.7 Mton in CO<sub>2</sub> emissions can be achieved here, which is more than 1 bcm of natural gas.

**4. Switch to LED**, high potential in old-fashioned fluorescent light appliances in companies and industry. For the Climate Agreement, [PBL](#) estimated this effect at 0.9 Mton CO<sub>2</sub> reduction (mainly through less electricity demand), or 0.3 bcm of natural gas. Because it is a simple replacement, this potential should be realized within a year.

**5. If a quick, temporary reduction is needed, a voluntary contribution scheme can contribute to demand reduction.** A government tender for companies that temporarily use less gas. The government has already done something similar with the coal-fired power stations, by compensating for stopping or using less coal-fired power stations. In a comparable manner natural gas tender could call who is prepared to temporarily use less gas, at the 'lowest cost per cubic meter of natural gas avoided'. Companies can receive 'bonus points' if they use this reduction in demand to implement structural sustainability measures and, for example, structurally reduce their gas consumption through electrification. The industry uses a lot of natural gas; a reduction of 10% already caters for approximately 1 bcm. When half of this amount is used for structural sustainability measurements, there is also a lasting effect. And the scheme can be a starting point for a Green Industrial Policy, for which the Dutch Parliament has asked.

**6. Regarding mobility:** oil may pose less of a direct supply risk, but from an economic perspective it dominates the transfer of money flows to Russia and other countries with limited civil rights. In the short term, more favorable fiscal tariffs are needed for emission-free company cars (possibly through a combination with a slight increase in the addition for conventional cars). In doing so, focus as much as possible on smart charging, and strengthen the link between clean power generation and charging of vehicles. And immediately link it to the 'stick': from 2025 all business cars must be, by law, emission-free. We have published [this plea](#) before, with remarkably broad support among companies (including LeasePlan and Shell, for example). An additional advantage is that you will still have a large supply of second-hand cars for private individuals before 2030: namely lease cars that are sold after three or four years.

## Private individuals

**1. Better set-up of installations in homes.** Just like in the service sector, there is still much to be done here, with technical adjustments and feedback to the user, especially with heating installations (central heating boiler). This results in a direct reduction in gas demand. [PBL](#) estimates this potential at 1.7 Mton CO<sub>2</sub>, or almost 1 bcm of natural gas. Inspection teams, for example organized by the municipalities, could also help citizens with this.

**2. Speed up the Dutch National Insulation Program (*Nationaal Isolatieprogramma*)** and accelerate the sustainability of rental properties through agreements and measures with housing associations and private landlords. See also the report of [The Central Bank \(DNB\) on the importance of this](#).

- Focus on a maximum feasible package that can be implemented before next winter and a package for the next few years.
- Make implementation power leading and link measures and money to this. Efforts will have to be made to maximize the availability of professionals.
- In addition, lower the thresholds for insulation budgets, including the removal of the requirement for two measures in the ISDE (Sustainable Energy Investment Subsidy).
- Make the schemes more accessible for lower incomes.

[PBL](#) estimates the potential for 2030 for these measures at more than 3 Mton CO<sub>2</sub> (almost 2 bcm of natural gas). It should be possible to realize a sixth (0.5 Mton , 0.3 bcm ) of this within a year, and half within a few years (total 1.5 Mton , 0.6 bcm).

**3. Supplementary package for making heat sources more sustainable in homes.** There are many options regarding this: solar boilers and solar panels, heat pumps. Favorable schemes such as the ISDE investment subsidy scheme and the net metering arrangements for domestic solar power already exist, especially for the currently high energy prices. Profits can mainly be achieved by:

- Full-service provision for residents, when making a choice (which technology fits well with my home?), when finding an installer (how do I find a good one?) and when financing (if necessary).
- Standardization for heat appliances, for example a compulsory heat pump or a hybrid boiler instead of a central heating boiler when the central heating boiler needs replacement, or a ban on new central heating boilers.
- Add modern, clean biomass boilers to the ISDE again.
- Collaboration with collectives (energy cooperatives, Home Owners' Associations (VvE's)), which makes upscaling possible. Support the collectives in their professionalization and organization, for example in collective insulation campaigns and demand bundling. This also allows for efficiency gains in implementation.
- Making these schemes more accessible for lower incomes. Ideally, people 'get' the measure initially for free and pay them off through their savings. This always ends up with legal obstacles and alternatively favorable loan options are often proposed. But many people do not want to get loans, especially poorer people.

Using [PBL](#) figures and the same reasoning as mentioned above, this would save 0.6 bcm of natural gas within a year, and a total of almost 2 bcm within a few years .

**4. There is of course always a lot of potential for smaller measures, window and door insulation strips, lower heating temperature, etc.** The costs for these measures are minimal, but they are still not applied as much as they should. The government could start a campaign and offer the people 'insulation packages' by driving through the neighborhoods with a 'handy bus', as the municipality of Rotterdam is now doing with an energy box that can save 180 euros annually. Creative solutions for implementation of small measures are important because professionals are already badly needed elsewhere. See also the practical tips of [Milieucentraal](#). If households manage to save 5% of their gas demand with these information campaigns, this saves 0.4 bcm.

**5. More than half of the subsidy budget for electric cars** (both new and second-hand) has already been applied for. It would be good to expand this budget – to include car sharing schemes (which is not possible now). Shared cars have an even greater impact: they often save more fossil kilometers because more people use them. In addition, electric driving will become accessible to more people. Like option 6, this measure mainly saves oil imports.

**6. Quick wins in mobility:** relatively quick savings are possible in traffic due to lower speed limits on the roads; adjust the tire pressure; by using the bicycle and public transport more often; and by continuing to work from home whenever possible.

## Energy production

Many alternative options for fossil energy exist, but the lead times of projects are usually too long. Some proposals:

**1. Shorten lead times across the entire chain** (production, infrastructure, consumption). Building projects often take about two years, the processes to get started often take about 6 to 8 years. Now is the time to achieve a breakthrough there, while retaining the opportunity to participate. Because this is a matter of large societal interest, it is worth all the efforts. This mainly speeds up reduction in gas demand that would otherwise come later.

**2. Renewable heat and green gas directly replace natural gas but are not getting off the ground very well. That is why the next SDE round is crucial:** make sure that these projects will survive. This applies to, geothermal energy, aqua thermal energy, green gas, green hydrogen, electric boilers, heat pumps, etc. These techniques will be covered by increasing the budget sufficiently (12 billion euros, according to [Aurora's analysis for the NVDE](#)). The structural solution is to set up a separate and sufficient budget for, among other things, sustainable heat, and sustainable gas. A budget of 3 billion for sustainable heat and green gas leads to more than half a bcm less demand for fossil natural gas. That can be repeated in later years; there is plenty of potential. Then the amount of natural gas saved will also multiply these savings.

**3. Sustainable biomass** can be scaled up relatively quickly. Residual flows from the Netherlands, Scandinavia or the Baltic States are preferred to the natural gas from Russia. The existing use of woody biomass already saves 3 bcm of gas, which is roughly half the amount of Russian natural gas that the Netherlands imports annually for domestic use. That is already substantial and can still grow, within strict criteria for the sustainability of the source and the air quality in the living environment. In greenhouse horticulture, approximately 3 bcm of natural gas per year is used for natural gas boilers. These boilers can be replaced by bio boilers in the short term. Within a few years it should be possible to replace a quarter of these boilers when new projects for low-temperature heat from woody biomass are allowed back into the SDE++ (Stimulation of Sustainable Energy Production and Climate Transition). In addition, bio-boilers can help accelerate district heating when combined with other renewable heat sources that experience a harder time meeting peak winter demand.

**4. Speed up legislation aimed at collective heating facilities and natural gas-free residential districts.** Related legislation and amendments to allow municipalities to disconnect districts from the gas network as part of their Transitievisie Warmte (Heat Transition Vision - power of perseverance). are ready for approval in the House of Parliament and the Senate. Moreover, quickly introduce a national subsidy scheme for covering the financial gap of the connection to the heat distribution grid (regulation is in accordance with the Dutch coalition agreement). Make sufficient budget available so that 1 million homes can be connected before 2030 (the Climate Agreement was set for 700,000 residences). This measure supports the promotion of sustainable heat.

**5. Solar projects** are progressing relatively quickly, but we are running into new bottlenecks (grid congestion). The use of battery systems for large solar projects can accelerate integrating more renewable projects. Structural solutions have been mapped out in the initiative '[Samen sneller het net op](#)' (getting connected to the grid faster together): this way, solar (and wind) energy can feed in electricity during a larger part of the day and year, and therefore decreases the demand of coal and gas-fired power stations. It also allows for less sustainable electricity to be 'thrown away' due to transport limitations. Costs of batteries drop quickly, and the power of the batteries increases, which makes them more attractive. With good policy, the Netherlands can accelerate this development. According to [CE Delft on behalf of TKI Urban Energy and Enexis](#), 7.5 GW extra solar parks can be integrated into the grid with the use of batteries. The subsidy scheme for large-scale batteries as proposed in '[Samen sneller het net op](#)' is a good start. The other proposals from this widely supported action plan also deserve rapid implementation because they can enable the rapid growth of sustainable generation and electrification of heat and transport.

**6. Hydrogen production and electrolysis on land and at sea** can play an important role towards 2030. Various large parties and innovation clubs are now thinking that it has a serious chance of contributing as early as 2030. The production of green hydrogen is crucial as an alternative to natural gas, and the Netherlands has many options for developing it at sea. By optimizing the wind turbine & electrolyzer, more hydrogen can be produced per square kilometer of sea surface (which compensates for the conversion loss) and transported to land and onshore via the gas pipelines. In this way, the demand for green hydrogen, for example for the industry, can be delivered directly from the source and, moreover, the electricity network is spared. This could become a new source of inspiration of the transition in which the Netherlands once again excels.

Achieving the climate goals in 2030 can only be achieved through a strong commitment to electrification. It is important to properly match extra demand and extra supply, also in relation to the required energy infrastructure. It is inevitable that total emissions from the electricity sector will continue to fall, while production will increase. Green hydrogen can play an important role in this and needs a strong boost: not only because this (unlike blue hydrogen) directly saves natural gas, but also because the EU requires in the Fit-for-55 goals that 50% of the hydrogen must be green.

**7. Interest rate discount for renewable energy and savings via the ECB** : Due to increasing inflation, interest rates are also rising. The European Central Bank has an important control mechanism for the transition. A higher interest rate hampers renewable energy more than fossil fuels as the capital costs for renewable energy are usually much higher in proportion. With an interest rate discount for renewables, the ECB can accelerate the transition and prevent it from being unintentionally slowed down. [This idea is already alive in the financial world](#); time for it to become integrated within policy.

## Labor market: extra professionals needed

The availability of skilled professionals needed to realize the measures is a crucial precondition for realizing the proposed accelerations. Therefore:

**1. Invest in additional professionals through (re)training and further/refresher courses.** Step up the recruitment and retention of employees (e.g., from fossil sectors that are shrinking or disappearing). Enter a bonus for those who start working in the energy transition (e.g., when switching to the installation sector).

**2. Introduce financial incentives to entice students into technical educations,** such as a graduation bonus for MBO graduates in technical sectors that experience shortages.

**3. Lower the barriers to recognition of educational and professional qualifications from abroad.** How wonderful would it be if Ukrainian refugees with a technical background help reducing our imports of Russian gas in the short term?

## Overview of the effects

All in all, these measures can lead to a reduction of roughly 10 bcm within a few years; almost half of them within a year. For comparison: The Netherlands now uses (depending on how you calculate) between 5 and 8 bcm of Russian gas. Positive side-effect is a CO<sub>2</sub> emission reduction of roughly 10 percentage points of our Climate Goals (55% in the National Climate Act).

Sector	Reduction natural gas demand <sup>1</sup>			Other reductions (~4 years)	
	now (bcm)	~this year (bcm)	~4 years (bcm)	fossil energy (PJ)	CO <sub>2</sub> (Mton)
1. Thermal insulation industry		0,5	1,5	48	2,7
2. Urgent control Wm			0,8	26	1,2
3. Better regulation of installations		1,1	1,1	36	2,7
4. LED at companies		0,3	0,3	11	0,9
5. Voluntary contribution to demand reduction	1	1	0,5	16	0,9
6. Mobility measures	pm				
Residences, private individuals					
1. Better balancing of installations		0,4	0,9	28	1,7
2. Insulation program		0,3	0,9	29	1,7
3. Making energy sources more sustainable		0,6	1,9	59	2,8
4. Accelerating collective heat facilities	pm				
5. Small measures		0,4	0,4	13	0,7
6. Subsidy budget for Evs	pm				
7. Quick wins in traffic	pm				
Production					
1. Accelerate lead times	pm				
2. Include sustainable heat in the SDE subsidy			0,6	18	1,0
3. Sustainable new bio-heat			0,8	19	1,3
4. More solar projects			0,7	23	2,1
5. Hydrogen (at sea)	pm				
6. Interest discount renewables, energy savings	pm				
Job market					
1. Retraining, refresher courses	pm				
2. Financial incentives	pm				
3. Recognition of foreign diplomas	pm				
<b>Total<sup>2</sup></b>	<b>1</b>	<b>4,7</b>	<b>10,4</b>	<b>325</b>	<b>19,6</b>

<sup>1</sup> All effects are allocated to savings in bcm low-calorific natural gas (lower value). Regarding the reduction of electricity demand, it is assumed that half of this reduction will lead to less use of gas-fired power stations.

<sup>2</sup> Simple addition without considering overlapping effects of measures. Reduction ~4 years includes the reductions realized within ~1 year.