What Government Should Do About Batteries

From a storage target to a system design

J. Konstapel · Constable Research, Leiden · 26 November 2026

Abstract

On 9 November 2026 the Dutch cabinet published its first Policy Agenda for Energy Storage. It sets a benchmark of 110 GWh of battery capacity by 2040. That is about fifty times the level at the end of 2025. The agenda lists 25 actions. This essay asks what government should actually do. It argues that the target measures the wrong thing. A battery produces nothing. It holds a state for a few hours. Its value depends on where it sits, on which time scale it works, and on what it replaces. The essay identifies five weaknesses in current policy. It then proposes seven measures. The core proposal is simple. Replace a volume target with a function target. Give every level of the system its own buffer. Treat small and large batteries equally. Build a separate instrument for seasonal balance. And make the Dutch battery industry independent where it is dependent today: in machines and process knowledge.

Keywords: energy storage, batteries, grid congestion, energy policy, Netherlands, decentralisation, industrial policy

1. Introduction

Dutch electricity has a timing problem. Solar and wind produce when the weather allows. People consume when their lives require. The gap shows up in prices. In 2025 the Netherlands recorded 585 hours with negative day-ahead prices. That is about 7 percent of the year. In the same year 16 petajoule of renewable electricity was lost through curtailment.

The cabinet's answer is batteries. The Policy Agenda for Energy Storage was agreed with grid operators, the sector association Energy Storage NL, regional governments and the regulator ACM. It sets a benchmark of 110 GWh and 28 GW for 2040. This implies an average of four hours of discharge. At the end of 2025 about 2.1 GWh was installed. The ministers state that well-placed storage could save up to €4 billion in grid investment. Progress will be tracked in a Monitor Energieopslag, run by RVO.

This is a serious step. For the first time storage has a place in national planning. But a target is not a design. This essay examines what the battery does, where current policy falls short, and what government should do instead.

2. What a battery does, and what it does not do

A battery generates nothing. It takes electricity when there is a surplus. It holds it for a while. It returns it when there is a shortage. A 200 MW battery in Winschoten, financed by five banks in August 2026, illustrates this. It holds its charge for up to four hours. Then it must give it back.

The battery is therefore a correction to a system that lacks a holding state. The classic grid knew two states: generation and consumption. Fuel in a tank and water behind a dam provided the holding. Wind and sun cannot be held that way. The battery restores the missing state. It works like a prosthesis. It is useful. But it is not a cure for the design.

The common word 'storage' hides this. It suggests a warehouse that fills and empties. A better description is a state held over time. That description has a consequence. Every buffer has a characteristic holding time. A four-hour battery does not help in a windless week. It does not help in January. A target in GWh says nothing about which holding times are covered.

3. Five weaknesses in current policy

3.1 The target measures volume, not function

110 GWh is an amount. It does not state which problem is solved, where, or for how long. A battery on a congested grid node and a battery that only trades price spreads count the same. The agenda partly recognises this. It speaks of 'grid-aware' placement and flexible contracts. But the headline figure remains a volume.

3.2 One time scale dominates

The benchmark assumes an average of four hours. That covers the day–night cycle. It does not cover days of low wind. It does not cover the seasons. The cabinet itself says that seasonal storage, such as hydrogen in salt caverns, is still in its infancy. Many Dutch start-ups in this field fail to scale up. The seasonal gap is therefore the largest gap. It is also the one with the weakest instrument.

3.3 Large batteries come first

Megabatteries have already been relieved of double energy taxation. Home batteries, neighbourhood batteries and cars that feed power back have not. For them the issue is still under study. Yet the cabinet states that these small systems are especially effective in residential areas. ACM also gave batteries priority for grid connection. That helps large projects. Small buffers do not need a connection queue. They need fair taxation and clear rules.

3.4 The industrial base lies elsewhere

According to the IEA, China produced well over 80 percent of all batteries in 2025. Between 60 and 100 percent of each step in the supply chain is located there. Production costs in Europe and the US can be up to 50 percent higher. China has also introduced export licences on cells, cathode materials, graphite and production machines. European gigafactories such as Northvolt and ACC struggled with yield and scrap. The deeper dependence is not chemistry. It is the machines and the people who tune them. A target of 110 GWh, filled with imported cells, deepens that dependence.

3.5 Demand is treated as given

Peaks are partly made by policy. Heat pumps reach a high efficiency in the lab. On cold winter evenings their efficiency drops, often to about two or lower. That is exactly when demand peaks. Mass adoption synchronises these peaks. A battery then compensates for a load that better insulation or smarter timing could avoid. Storage policy without demand policy treats the symptom.

4. What government should do

The following seven measures build on the current agenda. They do not reject it. They redirect it from volume to function.

Measure 1. Replace the volume target with a function target

Keep 110 GWh as an indicator. But set the real targets per time scale and per level. The question is not 'how many GWh?' The question is 'which holding times are covered, at which level?' Table 1 gives a simple frame.

Table 1. Time scales and the buffers that serve them

Time scale	What must be held	Suitable buffers
Seconds to minutes	Frequency and voltage	Power electronics, flywheels, fast batteries

Hours	Day–night solar shift, evening peak	Home, neighbourhood and grid batteries, EVs
Days	Wind lulls, cloudy weeks	Larger batteries, heat buffers, flexible demand
Months	Summer surplus, winter demand	Ground heat, hydrogen in salt caverns, other long-duration options

The Monitor Energieopslag should report on this matrix. A gap in the 'months' row is then visible. Today it is hidden inside one figure.

Measure 2. Treat small buffers as equal to large ones

End double energy taxation for home batteries, neighbourhood batteries and vehicle-to-grid now. Do not wait for more study. The fix already exists for megabatteries. Apply the same logic. Also extend the supplier compensation for grid support to the whole country in 2027, as planned. Make it a right, not a supplier option.

Measure 3. Give every level its own buffer

A robust system has buffers at every level: device, home, street, neighbourhood, region and country. Each level should be able to take, hold, give and rest. Then a disturbance stays local. Concretely: reserve space for neighbourhood batteries in spatial plans. Let municipalities and housing corporations own them. Keep loops short. Generate where you consume. Hold where you generate. Use direct current inside buildings where it avoids conversions.

Measure 4. Put demand before storage

Every avoided kilowatt-hour needs no battery. Insulation comes first. Then timed operation of heat pumps and chargers. Then hybrid heating for the coldest hours. Government should link storage subsidies to demand reduction in the same district. Otherwise it pays twice: once for the peak and once for the buffer.

Measure 5. Build a separate instrument for the seasons

Seasonal balance will not emerge from a battery market. Its business case is weak and its time horizon long. Government should run a dedicated programme. It should combine ground heat, salt-cavern hydrogen and other long-duration options. Invest-NL can carry the scale-up risk. The agenda already mentions this. It should become a budget line with its own target, not a study.

Measure 6. Make the industry independent where it is dependent

The Netherlands has chosen a niche. It does not build a cell gigafactory. It builds equipment, components and research through BCC-NL and the National Growth Fund programme 'Material Independence & Circular Batteries'. That programme has up to €296 million for 2024–2031. Focus it on two things. First, production routes outside the controlled steps: plasma deposition, spatial atomic layer deposition and electrodeposition. Second, inline measurement and closed-loop process control. That is where Dutch strength in metrology and lithography lies. Then process knowledge sits in the system, not in imported technicians. Every percent less scrap saves a gigafactory millions per year.

Measure 7. Measure against a fixed reference

A monitor that only counts installed GWh rewards volume. Define a fixed reference instead. For example: hours of negative prices, curtailed energy, congestion hours per region and unserved winter demand. Publish these every year. Never adjust the reference to fit the result. If the numbers do not fall, the policy is not working, however many GWh are installed.

5. Objections

'Batteries have become cheap. Let the market decide.' Prices have fallen sharply. But the market rewards price spreads, not grid relief or seasonal cover. Operators already report that their business case is hard to close. A market without a function target delivers the cheapest GWh, not the most useful ones.

'Large batteries relieve the grid faster.' Sometimes they do. A well-placed large battery at a congested node is valuable. The point is not to stop large batteries. The point is to stop treating them as the default and small buffers as an afterthought.

'Decentralisation costs more.' Per kWh, a home battery is more expensive than a grid battery. Per avoided problem, the comparison changes. A local buffer avoids local grid reinforcement, conversion losses and long transport. Those costs belong in the comparison.

6. Limits of this essay

The figures come from government publications, trade press and the IEA. Sources differ on installed capacity at the end of 2025: 2.1 GWh in the parliamentary letter and 2.9 GWh in one trade report. The structural rules in Section 4 (four states per level, a ladder of holding times, a fixed reference) come from the author's earlier work. They derive from his Vacuum.Net framework. Here they are applied as design principles. Their effect on cost and reliability should be quantified per region.

7. Conclusion

The cabinet has given storage a place in national policy. That is progress. But a battery is not a source. It is a held state with a limited holding time. A good policy therefore asks which holding times are missing, at which level, and why. The answer today is clear. The seasons are not covered. Small buffers are disadvantaged. Demand is taken as given. And the industrial base lies abroad.

Government should therefore do four things above all. Set function targets instead of a volume target. Treat every level of the system equally. Build a real instrument for the seasons. And invest in the machines and measurement that make Europe independent. Then 110 GWh becomes a result, not a goal.

Annotated references

Rijksoverheid (2026, 9 November). Overheid en energiesector spreken doel en acties af voor meer grote batterijen in Nederland. https://www.rijksoverheid.nl/actueel/nieuws/2026/11/09/overheid-en-energiesector-spreken-doel-en-acties-af-voor-meer-grote-batterijen-in-nederland

Official announcement of the Policy Agenda for Energy Storage. Gives the 110 GWh benchmark, the partners and the household compensation scheme. Start here for the government's own framing.

Tweede Kamer (2026). Kamerbrief Beleidsagenda Energieopslag 2026 and accompanying documents (2026D56329, 2026D56330). https://www.tweedekamer.nl/downloads/document?id=2026D56329

The parliamentary letter itself. States 110 GWh / 28 GW, an average of four hours, and about 2.1 GWh installed at the end of 2025. Essential for exact wording and commitments.

Solar Magazine (2026, 9 November). 25 acties moeten uitrol batterijen versnellen. https://solarmagazine.nl/nieuws-zonne-energie/i45299

The clearest overview of all 25 actions by theme. Includes the €4 billion grid saving, the €35 million Flex-e budget and the review of double energy tax. Use it to check which actions are studies and which are decisions.

Solar Magazine (2026, 16 September). Kabinet mikt op 110 gigawattuur batterijen en maximaal 95 gigawattpiek zonnepanelen in 2040. https://solarmagazine.nl/nieuws-zonne-energie/i44795

Explains the National Energy System Plan (NPE) behind the benchmark. Notes that the share of home batteries and EVs in the 110 GWh is still open.

Van de Weijer, B. (2026, 9 November). Kabinet wil spectaculaire groei aantal batterijen aan het stroomnet. de Volkskrant.

Journalistic summary of the agenda. Covers the business-case problem, the tax relief for megabatteries and the infancy of seasonal storage. Good for the public debate.

Solar Magazine (2026). 57 procent stroom vorig jaar duurzaam, 16 petajoule verloren door afschakeling. https://solarmagazine.nl/nieuws-zonne-energie/i42577

Source for 585 negative-price hours and 16 PJ curtailment in 2025. Useful as a baseline for the fixed reference proposed in Measure 7.

Solar Magazine (2026). Negatieve stroomprijzen maken zonnepark steeds vaker onrendabel ondanks subsidie. https://solarmagazine.nl/nieuws-zonne-energie/i44716

Gives 2.9 GWh installed at the end of 2025 and compares it with daily summer solar output. Shows how small current buffers are against the daily cycle.

International Energy Agency (2026). Global battery markets are growing strongly – and so are the supply risks. https://www.iea.org/commentaries/global-battery-markets-are-growing-strongly-and-so-are-the-supply-risks

Authoritative data on China's share of battery production and cost gaps. Read with the IEA Global EV Outlook 2026 for chemistry trends.

Batteries International (2026, March). IEA report counts global cost of China's battery dominance. https://www.batteriesinternational.com/?p=25095

Summarises the IEA finding that 60–100 percent of each supply-chain step sits in China. Discusses the paused export restrictions.

Konstapel, J. (2026, 31 August). Wat is er mis met een batterij? constable.blog. https://constable.blog/2026/08/31/the-grid-that-cannot-hold-what-is-wrong-with-the-electricity-system-the-thinking-errors-behind-it-and-the-simple-net-alternative/

The author's analysis of the Winschoten battery. Sets out seven thinking errors and seven structural rules, including the four states and the ladder of holding times used in Section 4.

Konstapel, J. (2026, 16 October). The future of batteries. constable.blog. https://constable.blog/2026/10/16/the-future-of-batteries/

On materials, manufacturing energy, European gigafactories and Chinese export licences. Basis for Measure 6.

Konstapel, J. (2026, 16 October). The Dutch lines of battery research and what the net adds. constable.blog. https://constable.blog/2026/10/16/the-dutch-lines-of-battery-research-the-vacuum-net-and-what-the-net-adds/

Maps BCC-NL, the Growth Fund programme and research consortia. Identifies inline measurement at production scale as a Dutch gap.

Konstapel, J. (2026, 21 April). Waarom het elektriciteitsnetwerk helemaal niet 'vol' hoeft te lopen. constable.blog. https://constable.blog/2026/04/21/waarom-het-elektriciteitsnetwerk-helemaal-niet-vol-hoeft-te-lopen/

Argues that congestion is a peak problem. Discusses heat-pump efficiency in winter, demand shifting and local batteries. Basis for Measure 4.

Konstapel, J. (2024, 10 December). Een radicaal plan voor energieonafhankelijke wijken en bedrijven. constable.blog. https://constable.blog/2024/12/10/titel-een-radicaal-plan-voor-energieonafhankelijke-wijken-en-bedrijven/

A worked example of neighbourhood self-sufficiency with home and neighbourhood batteries, including cost estimates. Illustrates Measure 3.