

odel

Superintelligence on Norwegian terms.

Superintelligence is becoming what energy has long been, the one input every nation needs and every nation wants more of. Norway has stood here before. With its rivers, its land, and so few people to share them, it can secure everything it needs and still have a great deal to sell. But energy made Norway rich only because Norway set the terms before the value arrived, and the value is arriving again, far faster this time.

Norway is already getting superintelligence factories, the datacentres built to run the new models. Some are running, more are approved, and far more stand in line for power. The debate around them has begun with how many there should be, and where. It is a fair question, but it is the third one.

The first is what each factory is worth to Norwegians. What a factory pays, who runs it, and what it leaves behind are all for Norway to decide, and the same building can leave the country a great deal or almost nothing. Get the unit right, and only then decide the scale.

The second is whether these factories are a need or a want. Up to a point they are a need, as food, energy, and defence are, because a nation that cannot run its own superintelligence cannot count on having it. Beyond that point they are a want, and how many more to host is for Norwegians to choose.

That gives the order of everything that follows. Make each factory worth as much as it can be, reach the floor Norway needs with as few of them as possible, and then let Norwegians decide how much further to go. Every step rests on the record or on plain logic, except for two judgements, and each is named where it comes.

1 NATION

Anything that lives, whether a person, an animal, or a nation, wants first to go on living. Only then does it want anything else, and everything else it wants is satisfaction. The two differ in kind. Persistence is objective, since something either goes on or it does not, while satisfaction is subjective, and only the one who wants can say what would satisfy it, whether wealth or comfort or beauty or something no one else would ever choose.

For a nation, to persist is for its people to go on, fed, safe, and living under their own law. Its core is its people, their food, their security, and their law. Behind that core stand the enablers, the inputs everything is made from and made with, which are raw materials, energy, money, and intelligence, the knowing of what to do and how. Whatever a nation wants beyond these is satisfaction.

The line between the two is old, and each side of it needs its own system. Adam Smith, the great champion of free trade, still made an exception for defence, which he judged “of much more importance than opulence.”¹ Alexander Hamilton, laying the economic foundations of the United States, wanted the young country to “possess within itself all the essentials of national supply.”² What a nation needs in order to persist, it secures in advance and for itself. Above that floor the logic turns over, because people know best what satisfies them, and Milton Friedman spent a lifetime showing that people choosing freely do better than any plan drawn up on their behalf.³ Treat everything as satisfaction, and a nation can be cut off from what it cannot live without. Treat everything as persistence, and the state ends up planning what it can never know.

Norway already lives by this line. It supports its farmers so that its food is grown at home, keeps nine-tenths of its hydropower in public hands,⁴ and owns half of Nammo, and almost everything else Norwegians want, it leaves to their own choosing.

A nation secures its core, and every enabler it cannot count on getting, and leaves the rest to its people. The question is on which side of that line superintelligence falls.

2 SUPERINTELLIGENCE

Intelligence has always been one of the enablers, and until now it lived only in people. Every nation grew its own, in the heads of its own people, and secured it the only way it could, by teaching them. No one could cut a nation off from what its people knew.

Intelligence made by machines can be cut off. A model thinks only while it runs, and it runs only where there are chips, energy, land, and permission to use them, so intelligence is becoming a flow, made fresh every second, as well as a stock kept in heads. Energy once made the same move. While work was done by muscle, every nation supplied its own, but once work was done by fuel, a nation could be cut off from outside, and that is when energy joined the list. Norway put its waterfalls under *konsesjon*, and after 1973 the industrial nations bound one another to hold emergency stocks of oil.^{5,6}

The first judgement, and the one everything after it rests on, is that more and more of a nation's thinking will be done by machines. Richard Sutton, a founder of reinforcement learning and a winner of the Turing Award, looked back across seventy years of research and found that the general methods that use more computation have won, and by a wide margin.⁷ The largest military in the world has already begun to buy, with contracts in 2025 worth up to 200 million dollars each with four frontier labs.⁸ None of this shrinks the thinking a nation needs. It shifts who does it, and as the share done by machines grows, securing what Norwegians know stops being enough. Norway has to secure what its machines think as well.

That puts superintelligence on the list of what a nation must secure, and it makes it an opportunity besides. Every nation will feel the same need at the same time, so demand will come from everywhere, and a nation that can make more than it needs will hold something the whole world wants to buy. Norway has learned that lesson once already, with energy.

Up to a floor, then, superintelligence is a need, and above it an opportunity. What remains is to see what securing it actually takes.

3 SUPPLY

To secure superintelligence is to secure its supply, and superintelligence is software running on hardware. Each has four parts. The software is the model, the data it works with, and the harness and tools that put it to work, and the hardware is the energy, the chips, the land, and the permission to build on it. Turning the hardware into a working factory then takes capital once and competence for as long as it runs, and each of these is secured in its own way.

Each part of the software can be owned or rented. Some of what a nation asks of its machines has a threshold, where good enough is enough, and some has none, where better is always worth more or only being ahead counts. For the first, open models already exist, and since a model is a file and a copy kept is kept for good, Norway can own what it needs outright, along with the harness and tools to run it. For the second it needs the closed models at the frontier, which it can only rent, and so it needs good relations with at least one of the labs that build them. Those labs are in the United States and China, and for Norway, a founding member of NATO, the choice between the two was made long ago. The data it owns in any case, since its registers, its records, and its language exist nowhere else.

What is rented is made safe twice over, by securing the supply and by depending on it as little as possible. There are several frontier labs, which is itself a safeguard, so good relations with more than one keep the supply secure, and owning every part that can be owned keeps the dependence small. None of this means doing without the frontier. While relations are good, Norway can run whatever it likes on the best models there are, but it plans for the day access is cut, because that is where the risk lies, and on that day what it owns has to be enough.

The hardware has to be secured every day. A model is trained once, and the training can happen anywhere, so Norway can simply take the finished product. But a model runs every time it is used, and running takes the hardware and the competence to work it, in that moment and in every moment after. For persistence, what counts is the running.

The chips work much as the models do. Good chips can be bought in a deep market, and a chip once bought stays bought, while the newest take good relations with the few who make them. Norway will make neither the frontier models nor the chips, so with both it stays close to those who do. To hold a floor it needs not the newest chips but enough good ones, renewed toward the frontier as each generation arrives, so that in the worst case the chips it already has, or can find elsewhere, keep running.

Energy, land, and permission are different, because they belong to wherever the factory stands. None of them can be bought in a crisis. A factory need not stand in Norway, but Norway has far more control over the energy, land, and permission of one that does than of one beyond its borders. That control thins by layers, through the other Nordic countries, the EEA, and allies further off, and each layer may be enough for some purposes. The test is to play out every case and ask whether, in the worst of them, Norway would still have what it needs.

Capital is needed once, and competence for as long as the factory runs. Capital can come from anywhere. Competence can too, but the same test holds, because a factory need not be run by Norwegians, yet a state can count on its own people in a crisis as it can count on no one else. Competence is intelligence once more, the knowing of what to do and how, so it can be bought as people or as models, and more and more of the running can be done by the models themselves. Norway can also train its own people, but that takes years, and the frontier moves in months. NSM wrote this year that the ideal would be datacentres in Norway run by Norwegians, judged that ideal out of reach for now, and warned that leaning on foreign operators wears down the country's own ability to build, run, and protect its systems.⁹

Norway owns its data, owns what it can of the rest of the software and the chips, and rents what it must on good terms. The energy, the land, and the permission are its own to give, and the factories built on them, run as far as it can by Norwegians, it has to hold itself.

4 PLAYBOOK

Norway has held something like this before. When oil was found beneath the shelf, every piece was already in play, from the foreign companies with the capital and the competence to a resource no one had yet priced and a public that could not yet see its worth. Norway understood that one day it would have to run the industry itself, for its security and for its wealth, and it built the structure before the value arrived. The superintelligence factories draw their value from Norwegian ground in much the same way, and the same playbook fits them.

A resource's worth to a nation turns on four questions. Whose is it, on what terms is it used, how much of it is used, and what becomes of what it earns? Each answer is a step, claim, align, maximise, and compound, and each step can fail on its own.

Claim it, before anyone has put a price on it. In 1962 Norway turned down Phillips Petroleum's offer of 160,000 dollars a month for the whole shelf, and in 1963 it claimed *kontinentalsokkelen* for the state, six years before Ekofisk.^{10,11} In 1906, ten months after independence, it required a *konsesjon* to buy a waterfall, at a time when three-quarters of the developed waterfalls were already in foreign hands.¹² Nor need the claim be the state's. The merchant fleet of the nineteenth century, the third largest in the world, was owned in small shares by many Norwegians, and its value stayed at home.

Align it, with terms that make its value serve Norwegians before that value arrives. Under *hjemfall*, each waterfall, and everything built on it, returned to the state after a fixed term. *De ti oljebud* in 1971, and Statoil in 1972 with half of every licence, set the terms for an industry that barely yet existed.^{13,14} *Havbruk* shows what aligning late costs. Its licences were, in the government's own words, handed out in all essentials free or cheaply, and the resource rent tax came fifty years later, proposed at 40 percent and adopted at 25.¹⁵ Before anything is handed out, terms cost almost nothing, and once it has been, those who hold the asset resist any new price on it, as anyone in their place would.

Maximise it, using as much of it as adds value within those terms. Once the terms were set, the oil was developed at full speed, and because the state owned a share, the growth carried the public's share along with it. In the 2026 budget, 38 percent of the state's net cash flow from petroleum comes from what it owns directly, a sum no tax rate would have produced.¹⁶

Compound it, keeping the principal and living from the return. *Oljefondet* came in 1990 and *handlingsregelen* in 2001, after the spending of the 1970s had run ahead of the money.¹⁷ Even oil reached this step late, and the fund is now among the largest in the world.¹⁸

Claim and align cannot wait. Both cost almost nothing before the value arrives and almost everything after, while growing a resource and saving what it earns can be done at any time. Steinar Holden observed that once reserves are found, pressure from companies, politicians, and unions makes it all but impossible to slow the pace.¹⁹ Norway could move first because its institutions came first, and Halvor Mehlum, Kalle Moene, and Ragnar Torvik showed that resources enrich countries whose institutions reward producers, and impoverish those whose institutions reward grabbers.²⁰

For the superintelligence factories the value is arriving now, and the first two steps still stand open. Petroleumsloven says the oil shall be managed "in a long-term perspective for the benefit of the Norwegian society as a whole,"²¹ and no law yet says as much of the energy and the land the factories use. Writing that sentence is the claim, and the levers are the alignment.

5 LEVERS

Of the four parts of a factory's hardware, Norway alone can supply three, which are the energy, the land, and the permission. The chips, the capital, the competence, and the customers can all come from the world. So Norway holds four levers. It decides how much to supply, who gets it, and on what terms, and it can be a customer itself.

Supply is how much energy, land, and permission Norway makes available, and for energy that means the grid as well as the power. The power surplus reached a record 23 terawatt-hours in 2025, and even NVE's projection, which assumes most of the queue is never built, has it falling to about 4 by 2030.²² Statnett no longer takes new large reservations north of Svartisen.²³ Upgrading existing hydropower alone could add about 5 terawatt-hours a year, by NVE's estimate.²⁴

Allocation is who gets the capacity when there is not enough to go round, whether by queue, by selection, or by price. Today it is the queue. Since 2025 a project has had to show that it is ready to build in order to keep its place, but the queue still does not ask what the power is for.²⁵ Stortinget weighed selection, a concession system for datacentres, in March 2026, and asked first for an assessment.²⁶ Price is how Norway now hands out new *fiavbruk* capacity, by auction.²⁷

Terms are what each factory pays and what it leaves behind. It can pay a price for what Norway supplies, a tax on its profits, or a share of what it produces, and it can leave behind the competence to run it and, in the end, the factory itself. Today it pays the market price for its energy and ordinary taxes, and nothing in its terms gives Norway a share of what it makes, or the factory once its use is done.

Own demand is what the state uses itself. Olivia, the state's own research supercomputer, has 448 chips,²⁸ while a single commercial site at Narvik is contracted for more than 30,000.²⁹

As the levers stand, the value of scarcity goes to whoever reaches the front of the queue. Datacentres have asked for about ten gigawatts,²² which, running all year, would use several times the 2025 surplus, so a place in the queue is worth a great deal. That worth goes to the first project ready to build, and little of it finds its way back to Norway. SSB found that the value created for each megawatt-hour sold to datacentres halved between 2020 and 2023, from 1,207 kroner to 587.³⁰

Set for the most value, the levers give an aligned factory. It pays full price for its energy and brings new generation with it, so that whoever causes a cost carries it, as Arthur Pigou taught.³¹ It pays Norway a share of its revenue from the first day, measured at the site, energy in and compute out, whoever's chips are inside. A share beats a tax, because a rate can be changed and a profit moved abroad, while a share grows with the value and cannot be added later without being bought. Norwegians run it as partners and so gain the competence, as Statoil did beside Mobil at Statfjord.³² In a crisis, the state has first call on part of its capacity. And after a fixed term, agreed at signing, it returns to Norway, as the waterfalls did under *hjemfall*.

Every factory should come to the same terms, though not all at the same moment. Those already running keep the terms they came on, and take the new ones as they grow, since every added megawatt is a new request. Those approved but not yet connected take them at connection, and new ones take them from the start.

The second judgement is that builders will pay this price. The terms take part of a rent that exists only because what Norway supplies is scarce, and a share smaller than that rent still leaves a builder better off here than not here at all. The price of energy weighs less with a builder than it seems to, because the chips inside a factory cost far more than the energy that runs them, so builders compete above all for access, and ten gigawatts waiting in the queue shows how badly they want it. How large the rent is will be found through selection or price, which is why the share and the term are left open.

Every factory should be aligned, and every new one before it connects. Then the levers can turn the number up or down, and each factory still gives Norwegians the most it can.

6 PERSISTENCE

The floor is a number Norway sets for itself, and sets in advance. It is how much superintelligence the state, defence, and essential services must be able to count on if access from abroad were cut, fixed the way Norway already fixes how much food and ammunition it must be able to count on.

It should be reached with as few factories as possible, each worth as much as possible. The costly way is for the state to build alone. The cheaper way is to make the floor part of the alignment, since every aligned factory is run by Norwegians, can host the state's own chips, gives the state first call in a crisis, and returns to Norway at the end. A handful of such factories can carry the floor, and their share pays for it.

If the first judgement is wrong, the floor costs little. If the model stays a useful tool, a modest floor of aligned, Norwegian-run capacity pays its own way. If it becomes what states and armies run on, a floor not built now must be bought later at full price, or cannot be had at all. Building it is cheap in both futures, and waiting is cheap in only one.

Norway should set its floor now, and reach it through aligned factories. That is Hamilton's half.

7 SATISFACTION

Above the floor, the question turns from need to want. Norway faced it with oil in 1974, once it was clear there was far more than the country needed, and chose a moderate pace.³³ More factories would bring money, competence, and computing that Norwegians could use, and they would take energy, land, and nature in return. Whether that trade is worth making is a political choice, and today only 13 percent of Norwegians look on more datacentres favourably, against 40 percent opposed.³⁴

What reaches Norwegians decides whether more is worth wanting. An extra factory is worth what reaches Norwegians, less what it costs them. Aligned, it brings its share to the state, new generation to the grid, and competence to the workforce, while unaligned, most of its value leaves with the builder. Nor do factories simply add up. Competence gathers where the work is, and a grid built once serves many factories, but every factory draws on the same energy, so each takes scarcer energy than the last. The better each one is aligned, the more of them are worth having.

Here a representative's task changes. Where a question has an objective answer, a representative leads, and does what is needed whether or not it is popular. Where the answer is a matter of taste, a representative represents, because no one has the right to impose a subjective choice on anyone else. The floor is the first kind of question, and the number above it is the second. My own view is that Norway should host as many aligned factories as it can, but that is one view among many, and it has to win the argument like any other. Asked what he would do as dictator for a day, Friedman answered that he did not like dictators, and that "if we can't persuade the public that it's desirable to do these things, we have no right to impose them even if we had the power to do it."³⁵

A choice is only real if its options exist. Energy, land, and permission take years to prepare, so a state that waits has already chosen for its people, by closing options before they could weigh them. The democratic course is to reach the floor, prepare the ground for more, and then hold an open and fair debate about how far to go.

Above the floor, Norwegians choose the number, and the state's work is to make every option real and every factory worth the most. That is Friedman's half.

8 DECISIONS

The frame settles what Norway should do. How to do it, and how to carry it through Stortinget, is rightly a matter for debate, and these are the decisions the frame points to.

1. **Claim it.** Let the government's answer to Stortinget state that the energy and land the factories use are managed for the benefit of Norwegian society as a whole.³⁶
2. **Align every factory.** Put new ones on these terms before they connect and running ones as they grow, allocating capacity by selection or by price instead of the queue.
3. **Choose the instrument.** A *konsesjon* that binds every owner alike, as for the waterfalls, or a state partner on commercial terms, as for oil. Both have stood under EEA law.^{37,38}

4. **Give the state one holder.** Place the state's share, its first call in a crisis, and the factories that return to it in a single company, on the model of Pétoro.³⁹
5. **Set the floor, and prepare for more.** Fix it in the preparedness assessment Stortinget has asked for, and plan the energy, the land, and the permission so Norwegians can choose to go further.
6. **Compound the earnings.** Pay them into *olfondet* under *handlingsregelen*, and never spend the fund to build any of this, so that what the factories earn outlasts the factories themselves.

The share, the term, the size of the floor, and the number above it belong to negotiation, to Stortinget, and to Norwegians.

Odel is the old Norwegian word for land that stays with the family it belongs to. Under odelsretten, a farm sold out of the family can still, for a time, be taken back by family who will live there and farm it.⁴⁰ Norway carried that idea from the family to the nation, first with its waterfalls and then with its oil. Others were welcome to work them, and did, but the value came home. The superintelligence factories now rising on Norwegian land ask for the same idea once more, and that is what the name means.

In 1971 no one knew how much oil lay beneath the shelf, and Stortinget set the terms anyway. Norwegians have lived from that decision ever since. The same moment has come again, faster this time, and this value, unlike oil, has no last barrel. Getting it right falls to whoever holds office now, in every party, for it is not a question of left or right, and it will not wait until anyone is ready. Energy security was relearned through shortage, but compute security can still be learned ahead of one.

I write as a Norwegian and an American, now living in Bergen, and I spend my working life with these models, building Alexandria, which gives people the best system for their own data, and advising companies on the new technology through Axioms. Odel is my work for Norway. I believe Norway can do this, and that it would mean an enormous amount to Norwegians not yet born. If any step here looks wrong to you, I would be glad to hear it, and the two judgements are where I would look first.

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