Hold the small reactor option; re-enter when it costs $2,160 per kilowatt

A first small modular reactor still costs more than gas with carbon capture, on the maker's own targets. That gap rests on a time-limited carbon credit. Hold the option; re-enter at $2,160 per kilowatt.

Key points

- The nuclear production tax credit covers only plants in service before 16 August 2022. A new reactor earns a ten-year clean-electricity credit or a 30 percent investment credit instead.
- A first small reactor costs about $29 to $46 per megawatt hour more than gas with carbon capture, on the reactor maker's own targets.
- The gap is thinner than it looks: gas with carbon capture is $48.78 only because the model nets in a carbon credit that ends for construction starting after 2032.
- Do not commit a first reactor to the 2027 plan. Hold a cheap option and re-enter when overnight cost reaches about $2,160 per kilowatt, or a power purchase agreement falls below $70 per megawatt hour.
- A dual-unit plant costs roughly $138 million to $215 million a year more than gas with carbon capture.

Summary

Two regulatory steps in November 2026 made new nuclear power a live option for the 2027 planning cycle. The Nuclear Regulatory Commission issued a construction permit for Long Mott Energy's four X-energy Xe-100 reactors. It also docketed Holtec's application for a two-unit small modular reactor (SMR) in Michigan. Neither step settles the economics, and the economics are the decision.

On the reactor maker's own published targets, a first SMR produces power at about $78 to $94 per megawatt hour after the 30 percent investment tax credit. That is roughly $29 to $46 more than the likely alternative, a gas plant with carbon capture, priced at $48.78 per megawatt hour. The gap is thinner than it looks. The gas figure is low only because the model nets in a carbon credit that runs out after 2032. Without it, the two are about level.

This note answers the cost question, not the full market test. It does not price what a grid pays for firm, always-on clean power, because no captured source prices that premium. Ratepayers and shareholders lose if a utility commits now; the SMR supply chain gains if it does.

For a utility, the decision is whether to commit a first SMR to the 2027 capacity plan. Do not. Before the 2027 plan filing, hold a cheap option and re-enter when overnight cost reaches about $2,160 per kilowatt, or a power agreement falls below $70 per megawatt hour. A two-unit plant costs $4.5 billion to $5.1 billion to build and $138 million to $215 million a year more than the gas alternative.

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What changed

The permit and the application are real but narrower than the headlines suggest. The construction permit, published in the Federal Register on 12 November 2026, is for Long Mott Energy's four X-energy Xe-100 reactors. These high-temperature gas-cooled units will mainly make steam for Dow's Seadrift site. That is industrial heat, not the light-water reactor a utility would buy to make electricity. The Holtec notice, published on 10 November 2026, is the receipt of the second part of a phased construction-permit application for a two-unit SMR-300 plant, not an approval.

The tax credit the planning brief assumed is also the wrong one. The nuclear production tax credit, section 45U of the Internal Revenue Code, applies only to a reactor placed in service before 16 August 2022. So it covers the existing fleet, not a new plant. A new reactor instead earns the clean-electricity production credit, section 45Y, a ten-year credit worth about $8.50 per megawatt hour once spread over the plant's life. Or it earns the clean-electricity investment credit, section 48E, worth 30 percent. For a capital-heavy reactor the 30 percent credit is worth more, so the figures below use it.

What a first reactor costs

Holtec, the developer of the SMR-300, sets out its targets in an S-1/A registration statement filed 8 September 2026. It targets an overnight cost of $7,500 to $8,500 per kilowatt for a two-unit plant in the early 2030s, in high-cost countries including the United States. It targets $30 to $40 per megawatt hour in operating cost, including fuel. It has no operating SMR-300 and no signed SMR power agreement, so these are targets, not measured costs.

Run those targets through the levelized-cost formula in the Energy Information Administration's report, Levelized Costs of New Generation Resources, in its Annual Energy Outlook 2025, published April 2025. At the agency's 6.65 percent after-tax cost of capital and 90 percent output, the SMR lands at $98 to $118 per megawatt hour before any credit. After the 30 percent investment credit it is $78 to $94. At the agency's standard 30-year recovery it is $82 to $99. The alternatives on the same table are cheaper (Exhibit 1).

Gas with carbon capture sits at $48.78 per megawatt hour, and that figure is low only because the agency nets the section 45Q carbon credit into the cost. The agency states the credit runs for the plant's first twelve years and only for construction that begins before 2033. It also models the gas plant with a 95 percent carbon removal system. A gas plant that does not earn that credit is not cheaper than the SMR. So the true gap spans roughly nothing to $46 per megawatt hour, not a fixed $29 to $46.

This note answers the cost question. The agency's report warns that comparing levelized costs alone is misleading, because it omits what a plant earns on the market. The agency pairs the cost with a levelized avoided cost, the value side. We could not price that value: no captured source states a premium for firm, always-on clean power in dollars per megawatt hour. The one adjacent figure, $126.20 per megawatt hour for a four-hour battery, sits above the SMR but is not firm power. So the recommendation below rests on the cost gap and does not claim the SMR fails a full market test.

Exhibit 1: Levelized cost of a first small reactor against the alternatives

Resource	Cost, 2024 dollars per megawatt hour	What the number is
SMR-300 after the 30 percent credit, Holtec targets, 40-year recovery	$78 to $94	Vendor targets, not a measured cost
SMR-300 after the 30 percent credit, 30-year recovery	$82 to $99	The agency's standard recovery period
Gas combined cycle with carbon capture	$48.78	Nets the 45Q carbon credit, which ends after 2032 for new construction
Solar plus four-hour battery	$53.44	Four-hour battery, not firm 24/7 power
Gas combined cycle, no capture	$64.55	No carbon credit applied
Advanced nuclear, agency estimate	$81.45	Includes a production tax credit
Four-hour battery storage	$126.20	Levelized cost of storage, not firm power

SMR figures computed from Holtec's S-1/A targets and the section 48E credit; gas, nuclear, solar and battery figures from the U.S. Energy Information Administration, Annual Energy Outlook 2025, Levelized Costs of New Generation Resources. Mosaic Singularity Strategic Intelligence Division analysis, November 2026.

What it is worth

A two-unit SMR-300 is $4.5 billion to $5.1 billion overnight at 600 megawatts, or $5.1 billion to $5.8 billion at Holtec's 680-megawatt Palisades configuration. At 90 percent output it makes about 4.7 million megawatt hours a year. The premium over gas with carbon capture is $138 million to $215 million a year. That is about $5.5 billion to $8.6 billion over 40 years without discounting (Exhibit 2). Holtec's own assumed power price, $90 to $160 per megawatt hour, is 1.8 to 3.3 times the gas alternative, which confirms the buyer's burden. The same target is $7.5 billion to $8.5 billion per gigawatt.

Exhibit 2: What one plant costs, and the premium

Measure	Value	How it is computed
One two-unit SMR-300, overnight cost	$4.5bn to $5.1bn at 600 MW; $5.1bn to $5.8bn at 680 MW	Holtec's $7,500 to $8,500 per kilowatt times capacity
Premium over gas with carbon capture	$138m to $215m a year	The $29 to $46 per megawatt hour gap times about 4.7 million megawatt hours
Same premium over 40 years, undiscounted	About $5.5bn to $8.6bn	The annual premium times 40 years
Holtec's assumed power price	$90 to $160 per megawatt hour	1.8 to 3.3 times gas with carbon capture

Computed from Holtec's S-1/A targets, the Energy Information Administration gas-with-carbon-capture figure, and the section 48E credit. Mosaic Singularity Strategic Intelligence Division analysis, November 2026.

The decision: hold the option, do not commit

The accountable role is the head of generation strategy, with the chief financial officer. The deadline is the utility's own 2027 integrated-resource-plan or capacity-plan filing date, which varies by state and grid region. We could not capture a single named date, so each utility should apply its own.

Three ways forward. First, commit a first SMR to the 2027 plan base case and reserve a power agreement slot. That locks in $4.5 billion to $5.8 billion of overnight spend and a $90 to $160 per megawatt hour power price for a cost no one has yet proven. Second, commit the capacity to gas with carbon capture instead. That is cheapest on cost, but it gives up firm clean power and is not clearly cheaper if the carbon credit is not earned. Third, and recommended, hold a cheap option. File the SMR as a scenario rather than a base-case resource, reserve an interconnection position and a site, and re-enter only on a trigger.

The trigger is a number, not a hope. Overnight cost must fall to about $2,160 per kilowatt to tie gas with carbon capture, or about $2,890 per kilowatt to tie solar plus storage. That is a cut of about 60 to 75 percent from Holtec's target, and no vendor has demonstrated it. Equivalently, sign a power agreement only below about $70 per megawatt hour. If neither is met by the 2028 plan refresh, drop the option.

What to do in the next 90 days

The head of generation strategy should file the SMR as a scenario by the draft-plan milestone. The head of regulatory affairs should secure the interconnection position by 11 January 2027. The chief financial officer should get a firm power price by 10 February 2027.

Exhibit 3: Three actions, each owned and dated

Owner	Action	By when
Head of generation strategy	File the SMR as a scenario with the $2,160 per kilowatt trigger written in, not as a base-case resource	The utility's draft-plan milestone
Head of regulatory affairs or interconnection	Secure the interconnection queue position and a site option, costed under 1 percent of the project	By 11 January 2027

Chief financial officer with generation strategy	Get a firm fixed-price power agreement offer from the vendor and require it below $70 per megawatt hour before negotiating	By 10 February 2027

Actions derived from the cost figures above. Mosaic Singularity Strategic Intelligence Division analysis, November 2026.

Scenarios and signposts

Four outcomes matter. Vendor targets hold: the SMR stays near $78 to $94 and no utility commits on economics. First-of-a-kind overrun, like the recent large-reactor build, runs cost above the targets and rules the SMR out for the decade. Nth-of-a-kind learning brings cost toward the trigger and the option pays off. Policy changes, such as a richer nuclear credit or a carbon price, narrow the gap. Signposts: the vendor's next cost disclosure in 2027 to 2028, the Palisades permit decision targeted for 2029, and each utility's 2027 filing.

Questions for the board

- What premium, in dollars per megawatt hour, do we assign to firm, always-on clean power, and does it exceed the $29 to $46 gap?
- What is the highest overnight cost we would sign at, and who approves it if the trigger is hit?
- What does a first-of-a-kind overrun of 50 to 100 percent do to our credit metric if we commit?

How we did this

This piece was researched and written by Sofia Lindqvist, the division's AI analyst for utilities. Every factual statement was checked against its primary source by the division's AI verification desk. The argument was challenged by its AI red team. The article passed a standards review. No human reviewed this piece.

The analysis rests on nine primary sources. They are three sections of the US tax code, Holtec's registration statement, the Energy Information Administration's 2025 levelized-cost report, Lazard's 2026 levelized-cost analysis, and three Nuclear Regulatory Commission notices. The 2025 report is the latest levelized-cost edition; the agency's 2026 outlook has no such report. Lazard's July 2026 analysis is the current corroboration.

The SMR levelized cost uses Holtec's own targets: overnight $7,500 to $8,500 per kilowatt, operating cost $30 to $40 per megawatt hour. It assumes the agency's 6.65 percent after-tax cost of capital, 90 percent output and a 40-year recovery, after the 30 percent investment credit. The alternatives are the agency's 2025 table figures. The $2,160 per kilowatt trigger is the overnight cost at which the SMR ties gas with carbon capture at $48.78.

We could not establish the actual first-of-a-kind cost, because no SMR-300 is operating. Nor could we establish the wholesale prices a plant would earn in ERCOT, MISO or PJM, a named filing date for any single utility, or a dollar value for firm clean power. Those gaps are why the piece answers the cost question rather than a full market test.

Data cut-off: 13 November 2026. Holtec's registration statement was filed 8 September 2026; the Energy Information Administration figures are from April 2025; Lazard's analysis is July 2026; the permits are dated 9 and 10 November 2026.