Space Launchers 2026

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Situation and developments of the space launchers sector – focus on reusability

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Abstract

We are currently living a revolution of space industry, which has been called the advent of "New Space". The enabler of this revolution was the dramatic reduction of launch cost due to the introduction of truly reusable orbital launchers, after decades of false starts.
The reduction of kilogram to orbit cost is the key element that enables all the initiatives for a true industrialization of space and the possibility of human settlement in space. Having a picture of what is happening in the launcher sector is essential to show how and when civilian space development can start for real.
This paper summarizes the current status of the launcher market, focusing on reusable or at least potentially reusable and innovative launchers, dividing them in operational, under test and proposed. For each launcher the main characteristics are given, together with number of operative or test missions to date and a short history. Some information is given, as well, about announced or ongoing project that have not reached the test phase yet.

A little historical note

The idea of reusing space launchers was already there in the minds of space pioneers, but it was put aside in the early years of the space age due to cost and technical complexity. Making a single use launcher was of course easier, and cheaper if referred to each mission in a situation where just a few launches were foreseen of each launcher model.
Wernher von Braun started devising ways to reuse space vehicles at least since he moved to the US after WWII. The first project for a reusable space vehicle that actually reached the operational stage was of course the US Space Shuttle. Unfortunately it missed the objective of reducing cost and increasing launch cadence. Its successor, in the projects of NASA, should have been the Venturestar, a very ambitious reusable single stage to orbit vehicle. It was probably too ambitious and it did not survive the first failed tests on key components.
While NASA returned to expendable launchers, as all the other space agencies had never abandoned them, some bold entrepreneurs found that technical advances allowed to restart everything on new bases. As I am writing this lines, two of them have reached the operational phase with their families of rockets. They had both started in the 2010s but they subsequently followed different development paths, with one reaching a quasi-monopoly of orbital launches and the other getting to orbit only in 2025: of course we are talking about Elon Musk with SpaceX and Jeff Bezos with Blue Origin.

Several other companies are actively working at reusable launchers and some are almost ready to start their first orbital tests. In the next pages we will summarize this situation, giving a look first at operational rockets, then at those nearing their first launch tests and then at concepts and projects that are still in an early phase.

Reusable launchers currently in service

Space X Falcon 9

Falcon 9 is the workhorse of SpaceX. Its first flight took place in 2010. First successful recovery in 2015.

Numbers change almost daily, as of 23rd May 2026 they were:

- 638 completed missions
- 592 landings
- 557 reflights (source SpaceX)

These numbers dwarf any other launcher in history.

Essential data

Height	70 m
Diameter	3.7 m
Mass	549 054 kg
Payload to LEO	22 800 kg (17 400 reusable)
Payload to GTO	8 300 kg
Payload to Mars	4 020 kg

	First Stage	Second Stage
Engine type	Liquid, gas generator	Liquid, gas generator
Engine Designation	M1D	MVac
Number of Engines	9	1
Thrust	845 kN → 7605 kN	981 kN
Propellant	Liquid oxygen/kerosene	Liquid oxygen/kerosene

Reusability

Falcon 9 has a reusable first stage and an expendable second stage.
The first stage propulsively lands either on a landing zone near the launch site or on an ASDS (Autonomous Spaceport Drone Ship), depending on the mission profile.

Two or three engine burns are performed for landing:

- Boostback, with 3 engines - optional, when returning to onshore LZ
- Entry, with 3 engines - to reduce velocity before reentering the atmosphere
- Landing with the central engine only

Falcon 9 first stages, also called boosters, have been reused more than 30 times each till now. SpaceX initially declared the intention of reusing them up to 10 times, but after gaining experience on the condition of used (flight proven) boosters they decided to go on with more reuses.
Fairing halves, protecting the payload during launch, are also recovered and reused. After trying to catch them with nets before they splashed into the sea, SpaceX decided to let them land in water and recover them afterwards.

SpaceX Falcon Heavy

Falcon Heavy is the most powerful SpaceX launcher currently in service. Its first stage is composed of three cores, two of which are identical to a Falcon 9 booster, with the interstage replaced with a nose cone – and in fact some boosters have been reused in both roles - while the central one is modified with the needed connection hardware for the boosters. The second stage is the same of Falcon 9.
The two side boosters are routinely recovered and reused, while the central core is usually expended. No fully successful recovery of the central core ever happened, even when they tried to recover it. The terminal altitude and velocity of the central core during the typical mission makes it quite difficult to recover.
As of 23rd May 2026 the numbers were:

- 12 launches
- 21 total landings (counting each core)
- 18 reflights (source SpaceX)

Essential data

Height	70 m
Width	12.2 m
Mass	1 420 788 kg
Payload to LEO	63 800 kg
Payload to GTO	26 700 kg
Payload to Mars	16 800 kg

	First Stage	Second Stage
Engine type	Liquid, gas generator	Liquid, gas generator
Engine Designation	M1D	MVac
Number of Engines	27	1
Thrust	845 kN → 22815 kN	981 kN

Propellant	Liquid oxygen/kerosene	Liquid oxygen/kerosene

Blue Origin New Glenn

Blue origin has had in service a suborbital rocket, the New Shepard (named after the first US astronaut who flew on a suborbital mission), for several years. It has been carrying crew since 2021. In November 2025 their orbital launcher, named New Glenn (after the first US astronaut to reach orbit), performed its first operational mission launching two NASA probes towards Mars (via Moon L2), which was combined with the second test of booster reentry, with full success. The New Glenn booster is designed to fly at least 25 times.
Due to the success of this mission I moved New Glenn from the "in development" to the "in service" list of this presentation.

Essential data

Height	98 m
Diameter	7 m
Mass	
Payload to LEO	45 000 kg
Payload to GTO	13 000 kg

	First Stage	Second Stage
Engine type	Oxidizer Rich Closed Cycle	Expander, open cycle
Engine Designation	BE-4	BE-3U
Number of Engines	7	2
Thrust (Stage total)	17 100 kN	1 100 kN
Propellant	Liquid oxygen/methane	Liquid oxygen/hydrogen

Reusability and Missions

The New Glenn is designed for performances not much less than Falcon Heavy, but with a larger fairing (7 m of diameter against 5). It is partially recoverable, with a mission profile equivalent to Falcon 9 since it only has one booster. SpaceX is the benchmark for obvious reasons.
Blue Origin has a landing ship, named Jacklyn, where the booster lands after launch.
The New Glenn successfully accomplished its first test flight on 16th January, 2025, reaching orbit as foreseen. The booster failed the reentry since the engines did not restart for the reentry burn. The second stage carried a mock-up of Blue Origin's Blue Ring multifunctional orbital carrier.

The second flight, carrying NASA's ESCAPADE Mars mission, took place on 13th November 2025. It was a full success, achieving both the primary purpose of putting the two ESCAPADE

probes on their correct trajectory towards Earth-Moon L2 point, from where they will move on towards Mars, and the recovery of the booster stage by a perfect landing on the Jacklyn vessel.

The third mission lifted off on April 19th, 2026, from Launch Complex 36 at Cape Canaveral Space Force Station. The payload consisted in AST SpaceMobile's BlueBird 7 telecommunication satellite. Everything seemed to go well, until the second stage refused to relight, stranding the satellite on a wrong orbit, which caused the loss of mission..

Rocket Lab Electron

Electron, by Rocket Lab, is the only reusable small launcher currently in service. They usually launch from their own launch complex in New Zealand. Electron was the first private orbital rocket launched from a private launch complex. Its full reusability has not been proven yet: the first stage has been recovered 6 times, at least partially, and they are preparing for the first reflight.
Some numbers:

- First flight on 25th May 2017
- 88 total flights (as of 23rd May 2026)
- 250 satellites put successfully in orbit
- No reflights yet, only an engine has been reused

Essential data

Height	18 m
Diameter	1.2 m
Mass	13 000 kg
Payload to LEO	300 kg

	First Stage	Second Stage
Engine type	Liquid, electric pumps	Liquid, electric pumps
Engine Designation	Sea level Rutherford	Vacuum Rutherford
Number of Engines	9	1
Thrust (Stage total)	190 kN	25.8 kN
Propellant	Liquid oxygen/kerosene	Liquid oxygen/kerosene

Reusability

Electron first stage is designed to be reusable, while the second stage is expendable.

Two methods to recover the first stage have been attempted. In both cases the booster descends towards the sea under a parachute. They considered catching it in midair with a specially equipped helicopter or simply let it splash down. After several tests and attempts, extensive analysis of the

recovered hardware has shown that the booster can survive the splash down well, so this solution has been chosen as the primary method of recovery.

The first experiment of reflight, on 23rd August, involved just a single engine. Up to now, it seems they have renounced to refly boosters.

Reusable orbital launchers in development

SpaceX Starship

Starship is the new launch system by SpaceX, but if could be defined the first real space ship ever, that is intended to open a new era in space travel, allowing affordable access to Earth orbit as well as travel to the Moon and to Mars.

Looking at the nearest foreseen operative missions:

For SpaceX, Starship is essential to launch a new generation of Starlink satellites, much larger and with extended capabilities.

Starship has been chosen as the landing system for the NASA Artemis program to land humans on the moon and establish a permanent presence there.

SpaceX envisages missions to Mars, but this development has been postponed.

Essential data

Height	123 m
Diameter	9 m
Mass	5 000 t
Payload to LEO	100-150 t
Propellant 1st stage	3400 t
Propellant 2nd st.	1500 t

	First Stage	Second Stage
Engine type	Full flow closed cycle	Full flow closed cycle
Engine Designation	Raptor 2	Raptor 2/Raptor vac
Number of Engines	33	3 + 3
Thrust (Stage total)	7590 tf	1500 tf
Propellant	Liquid oxygen/methane	Liquid oxygen/methane

These data are referred to block 2.

Reusability and Tests

Starship is composed of two elements: the first stage, or booster, simply called the Super Heavy booster, and the second stage, simply called Starship.
Super Heavy has a flight profile much like the Falcon 9 booster, with some main differences:

- It does not need an entry burn since it is capable to tolerate the thermal and mechanical stress of reentry, due to its stainless steel structure;
- It is designed to land on its launch pad, without landing legs, being caught in midair by two movable arms linked to the launch tower.

Starship, meaning the upper stage, is an integrated spacecraft performing both the function of upper stage and that of space vehicle. It can be refueled in space to make it able to reach interplanetary destinations.

When landing back on Earth it performs a very innovative entry manoeuvre:

- It starts the reentry in a "horizontal" orientation, exposing a side that is protected with a thermal shield and controlling the descent with four aerodynamic surfaces (that are not wings!);
- Then it lights up the engines and rotates to a vertical position to perform a propulsive landing;
- As for the booster it will be caught in midair by moving arms – but it will have legs to land on the Moon.

As of the end of 2025, 11 suborbital tests have been performed. They reached just a little less than orbital velocity, to avoid the necessity of a deorbit burn.
The Super Heavy booster has already demonstrated the landing procedure being caught by the launch tower twice. The other test flights did not include a tower capture. Several different flight profiles have been tested.

The Starship, after some failures, has demonstrated:

- Capability to survive reentry without substantial damage
- Capability to perform the landing sequence ending with hovering condition at sea, with subsequent splashdown
- Relighting of an engine at almost orbital speed and altitude
- Deployment of satellite simulators in space

Several heat shield solutions have been tested in real reentry conditions
Two different main versions of the vehicle have been tested. With the 11th test flight, the block 2 version has ended its operational life.
In 2026 block 3 will be tested, with the target of getting to full orbital velocity, performing reentry burns and testing the reusability of the upper stage.
The Starship project is anyhow in delay and this may impact the schedule of the Artemis project.

SpaceX vs. conventional method

The conventional method of testing space vehicles foresees a lengthy preparation with several subsystem tests and verifications.

The objective is to have a fully successful test flight followed by operational flights starting often with the second overall flight attempt

SpaceX followes a totally different methodologies. Test items are flown well in advance of a complete development. Flight tests are used to find defects and regularly imply the explosive destruction of the vehicle.

Results are analyzed, corrections are applied and new features are added at each flight.

This implies a high number of destructive tests before operational readiness is achieved.

Until now this method has resulted to be less expensive and quicker.

Rocket Lab Neutron

Neutron is a medium size launcher under development by Rocket Lab. The first stage is designed to return to the launch site. Its first flight is foreseen in 2026. The rocket has already been built and both stages have passed their qualification tests.

Rocket Lab has announced that Neutron will be launched from Wallop Island, Virginia. They have already performed an Electron launch from there.

Essential data

Height	43 m
Diameter	7 m
Mass	480 000 kg
Payload to LEO	13 000 kg

	First Stage	Second Stage
Engine type	Oxidizer Rich Closed Cycle	Oxidizer Rich Closed Cycle
Engine Designation	Archimedes	Archimedes Vacuum
Number of Engines	9	1
Thrust (Stage total)	6600/8090 peak kN	890 kN
Propellant	Liquid oxygen/methane	Liquid oxygen/methane

Reusability

The first stage is designed to return to the launch site and integrates the payload fairing, which in fact envelops the second stage as well during launch.

Neutron has not a conventional fairing, but a “mouth” that opens to release the second stage with the payload and closes again to allow reentry. Therefore, the recovery of the fairing is assured with the recovery of the booster.

Relativity Space Terran

Relativity Space is developing a fully reusable, two stage medium size orbital launcher. The main characteristic of their rockets is that they are almost entirely 3D printed. They have made the largest 3D printer ever to be able to print an entire rocket.
They have already produced a prototype of a smaller, non reusable test model, designated as Terran 1. It was tested on 22nd March 2023 with good success, even if it failed to reach orbit.
The reusable model is called Terran R. In the picture at the left you see the old design, in the dedicated slide the new one is shown.

Essential data – Terran 1

Height	33.5 m
Diameter	2.28 m
Mass	9 280 kg (dry)
Payload to LEO	1 250 kg

	First Stage	Second Stage
Engine type	Gas generator	Gas generator
Engine Designation	Aeon 1	Aeon 1 Vacuum
Number of Engines	9	1
Thrust (Stage total)	900 kN	113 kN
Propellant	Liquid oxygen/methane	Liquid oxygen/methane

Terran 1 in flight

Terran 1 was launched for the first time on 22nd March 2023. The first stage performed nominally and stage separation occurred without flaws. There were several attempts to ignite the engine of the second stage but they failed.
The test was deemed a huge success. Surviving max-Q was considered the real target of the experiment and they went much beyond that.
Terran 1 now holds the record of being the first methane fueled rocket to reach space in the West, because it passed the Karman line – beating Starship!
Relativity Space announced on 12th April 2023 an accelerated plan to put Terran R into service, with some changes to the previously announced design.

Essential data – Terran R

Height	82.3 m
Diameter	5.5 m
Mass	
Payload to LEO	23 500 kg

Payload to GTO	5 500 kg

	First Stage	Second Stage
Engine type	Gas generator	Gas generator
Engine Designation	Aeon R	Aeon R Vacuum
Number of Engines	13	1
Thrust (Stage total)	14 900 kN	1 240 kN
Propellant	Liquid oxygen/methane	Liquid oxygen/methane

Terran R evolution

The plans for Terran R have been accelerated and the design has changed, from a fully reusable configuration to a partially reusable one, essentially comparable to Falcon 9.

They have added 4 engines to the first stage and made the second expendable. The first stage shall reenter and land on a ship. Essentially the mission profile shall be the same as Falcon 9 and the rocket has a very similar look. The previous representation was more like a smaller Starship.

The first launch is scheduled for late 2026. The vehicle is currently under construction.

Stoke Space Nova

Stoke Space is the latest American addition to the list of reusable launcher manufacturers.

Their design is very advanced and innovative, with unique features. The Nova rocket is a two stage fully reusable launcher.

Essential data

Height	40,2 m
Diameter	4,2 m
Mass	227 000 kg
Payload to LEO	3 000 kg max 7000
Payload to GTO	2500 kg

	First Stage	Second Stage
Engine type	Full-flow staged-combustion	Expander cycle with integrated heat shield
Engine Designation	Zenith	Andromeda
Number of Engines	7	1

Thrust (Stage total)	3113 kN	111 kN
Propellant	Liquid oxygen/methane	Liquid oxygen/hydrogen

Features and development

Nova is designed to be fully reusable, with a new concept for recovery and reuse of the second stage.

It features a unique integrated solution, where the expander type nozzle of the second stage doubles up as an actively cooled heat shield, allowing the reentry of the complete stage, including the load fairing, from orbit. This includes the capability to carry loads during the reentry (downmass), so that the second stage (see the image on the left) is a fully functional reentry vehicle, like SpaceX Starship. Unlike Starship, it can land on an unprepared surface.

They have already completed mission duty cycle testing on both 1st and 2nd stage engines. They are currently refurbishing Cape Canaveral Launch Complex 14 for their activity. Their financial status is good and they already have a launch contract with the US Space Force. First launch possibly in 2026.

Landspace Zhuque-3

Landspace is a Chinese startup, which is preparing the first test flight of Zhuque-3 stainless steel, 18.3 t to LEO liquid methane/liquid oxygen rocket. The first test flight took place in 2025. In the image on the left see the static fire that took place on 22nd October 2025.

They tested a 220 t full flow engine (that is, like the SpaceX Raptor) on 10th March, which means that they are on the way to make a competitor of the Starship.

Essential data

Height	76,6 m
Diameter	4,5 m
Mass	660 000 kg
Payload to LEO	21 000/18 300 kg

	First Stage	Second Stage (not documented)
Engine type	Gas generator	
Engine Designation	Tianque 12B	
Number of Engines	9	1
Thrust (Stage total)		
Propellant	Liquid oxygen/methane	Liquid oxygen/methane

Features and development

The Zhuque-3 rocket (following the non reusable Zhuque-2) is made of stainless steel and use liquid methane as fuel, like SpaceX Starship. Performances and flight profile are quite comparable with Falcon 9, instead. The second stage is not reusable.

The first Zhuque-3 lifted off at around 11:02 p.m. Eastern, Dec. 2 (0402 UTC, Dec. 3) in 2025, from a Landspace pad at the Dongfeng Commercial Space Innovation Test Zone within the national Jiuquan Satellite Launch Center. The second stage successfully achieved orbit, while the first stage attempted the reentry but suffered an anomaly during the reentry burn, which led to a crash very near the landing pad.

Therefore Zhuque-3 is on the same page as the New Glenn was after its first launch, which is very promising for the success of the project.

iSpace Hyperbola-3

iSpace (Interstellar Glory) has announced the Hyperbola-3, 13 t to LEO liquid methane/liquid oxygen launcher, with a reusable first stage, whose first flight is foreseen in 2025 with the first recovery to happen in 2026.

They successfully completed two hop tests, on 2nd November and 10th December 2023, with the Hyperbola-2 prototype.

Recent news report that they have launched a rocket recovery ship quite alike SpaceX ASDS ships.

Other Chinese (private) reusable rocket projects

The list of Chinese reusable launcher projects has become quite long. Besides Zhuque-3 and Hyperbola-3 there are: Tianlong-3 (Space Pioneer), Kinetica-2 (CAS Space), Pallas-1 (Galactic Energy), Gravity-2 (Orienspace), Nebula-1 (Deep Blue Aerospace).

Tianlong-3 recently completed a static fire test. It is a is a two-stage kerolox launch vehicle with a reusable first stage that is currently under development. It is designed to lift about 17t to LEO and 14t to 500km SSO.

Kinetica-2, of Chinese Academy of Sciences (CAS), recently has successfully completed its stage separation test. The rocket features a Common Booster Core (CBC) configuration, a core stage diameter of 3.35 meters, a total length of 53 meters, a liftoff weight of 625 tons, and a liftoff thrust of 766 tons.

Galactic Energy recently announced the success of a static fire of Pallas-1 rocket.The rocket has a take-off mass of approximately 283 tons and a maximum low-Earth orbit payload capacity of 7 tons, with a first-stage design enabling vertical recovery and reuse, said the company.

Orienspace sports the large solid rocket booster Gravity -1 and has now announced Gravity-2, a reusable liquid fuel vehicle with a core stage diameter of 4.2 meters, a total length of 70 meters, a liftoff weight of 715 tons, and a liftoff thrust of 990 tons. Max load to LEO 21.5 t.

Deep Blue's Nebula-2 promises a load capacity of 25 t to LEO.

All these launchers are inspired to Falcon 9, but it would be wrong to define them "copies". Each of them has a peculiar design, within a general architecture that includes a reusable first stage with kerosene/oxygen engines in variable numbers and payload to LEO between 7 and 25 t (some seem optimistic).

Chinese state owned company

CASC, the state-owned main launcher contractor, is also aiming for reusable rockets. This includes heavy lift and human rated launchers. Their reusable rocket is named Long March 12A, following the traditional name of all previous CASC launchers.

The first Long March 12A rocket, roughly the same height and diameter of SpaceX's workhorse Falcon 9, lifted off from the Jiuquan Satellite Launch Center at 9:00 pm EST on 23rd December 2025. The upper stage successfully reached orbit, while the first stage failed to complete the reentry burn and was lost. This places Long March 12A more or less on par with Zhuque-3: China has two reusable rockets which achieved the same result of New Glenn after the first launch.

They already have a reusable space plane, which can compare with the American X-37. It appeared on Chinese press that they are working on a full flow 200 t methalox engine, that is another engine like the SpaceX Raptor.

Menzhou and LM 10 double test

On 10th March 2026 CASC reached a spectacular milestone concerning its Moon program.

A Menzhou spacecraft, the new capsule intended to bring Chinese astronauts to the Moon, performed an abort test at max-Q, launched on top a first stage of the Long March 10, the reusable rocket intended to launch it to the destination.

The abort test was successful, with the capsule being recovered intact after the splashdown.

The first stage performed a perfect landing simulation with final splashdown, which is an even greater result.

Reusable orbital launchers in conceptual phase

ULA reusable Vulcan

The new Vulcan booster by United Launch Alliance is powered by Blue Origin BE-4 engines, which are part of the New Glenn project.

The version of Vulcan that has been launched in 2024 is expendable, but in 2020 NASA and ULA studied a concept for allowing the reentry of the propulsion module through aerodynamic braking instead of powered landing. An inflatable aerodynamic shield (HIAD) would be deployed to allow the recovery of the power module which includes the most expensive parts of the rocket.

There is no evidence that this project is actually being pursued.

Ariane Group

Space company ArianeGroup announced in July 2022 that it has secured funding to develop Europe's first reusable and eco-friendly launchers.

They also unveiled SUSIE (Smart Upper Stage for Innovative Exloration), a reusable spacecraft integrating the functions of upper stage and space vehicle. It will be able "to perform numerous vital missions in space, such as towing, inspection or upgrading of satellites and other payloads, as well as resupplying space stations with fuel, food, and equipment". It is described here since it integrates the second stage.

It is designed to reenter atmosphere as a lifting body and land propulsively, which makes it somehow equivalent to SpaceX Starship upper stage.

It should initially be launched with the expendable Ariane 6 first stage, but a reusable first stage should appear sooner or later…

ArianeGroup is also working within the European SALTO project for an European reusable launcher. The initiative is called Themis.

Themis is a European Space Agency (ESA) programme, for which oversight was given to ArianeGroup. Eight ESA Member States are participating in the programme: France, Switzerland, Belgium, Sweden, Spain, Netherlands, Poland and Hungary.

The test item for the vertical hop tests is now standing on Kiruna test pad, in Sweden, but they are waiting for the snow to melt before attempting a hop test.

The Themis vehicle is comparable to the SpaceX Grasshopper, used to test vertical take off, hovering and landing, in preparation for the Falcon 9. The first test took place on 21st September 2012 and the Grasshopper program was completed in 2013, so Europe is about 14 years late.

REL Skylon

The Skylon was to be a fully reusable, single stage to orbit spaceplane, proposed by British REL (Reaction Engines Limited).

It was designed to take off from a runway, fly to orbit and return back to the runway, without any kind of staging or discarded tanks.

The paylod to LEO was foreseen around 15 t and the turnaround time between launches should have been about one week.

Unfortunately on 31st October 2024 REL defaulted and ceased all operations.

In July 2025 Fraser-Nash and ESA announced the restart of the project as “Invictus”, but only as a hypersonic airplane, using the SABRE engine of Skylon.

The performance promised by Skylon was made possible by the SABRE (Synergetic Air Breathing Rocket Engine), a revolutionary, hydrogen burning propulsion system that works like a jet engine up to Mach 5 and 26 km of altitude, then switches to rocket mode. Up to that point it uses the oxygen of atmospheric air, then it starts using liquid oxygen from the onboard tank. The most delicate component is the inlet air cooler, which takes the external air overheated by the hypersonic speed at 1000°C and cools it down to ambient temperature to feed the engine. This component was tested successfully in 2019, while the preburner was tested in 2021.

India and Russia

The Indian space agency, ISRO, is experimenting a hypersonic vehicle, the RLV-TD, that is conceived as a testbed for future reusable space launchers and vehicles. They are known for making low cost expendable launchers and the new space development plan announced in 2023 by the government includes reusable launchers, even if the timeline is long as their development is yet to start.

Russia’s new Amur launcher, currently under development, is also announced to be reusable. It is smaller than the Falcon 9 with an 11.5 t payload. It will be methane powered.

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