

agilyx

COMPANY OVERVIEW

Agilyx, founded in 2004, is a leader in chemical plastics recycling solutions, positioned to solve and mitigate the global challenge of plastic waste. The company has developed a patented, flexible, commercially validated and scalable solution to convert waste plastic into recycled materials and products in a massive yet untapped market. With Cyclyx, a JV with ExxonMobil, Agilyx possesses the industry know-how of feedstock supply and management. Being a technology enabler that deploys an asset light model, Agilyx can scale many projects simultaneously and rapidly. ExxonMobil, Virgin & Technip Energies are several selected key partners of the company.

KEY CONSIDERATIONS

- Solving the global challenge of plastic waste
- Significant addressable market with huge opportunity for growth
- Integrated model with feedstock management and chemical recycling
- Technology is patented, proven and commercially validated
- Impressive partner/member/investor ecosystem
- Asset-light business model

VALUE PROPOSITION



1

Solving for one of greatest environmental challenges...

370mt
Of plastic produced per annum

8bn tons
Of plastic accumulated since 1950

2

...Which creates a tremendous TAM

Up to 1,900
Agilyx plants by 2030

Up to 100+mt p.a.
Demand for Cyclix Services

3

End-to-end integrated solution

Advantaged upstream
Via Cyclix

Plastic-to-plastic
Chemical conversion at Agilyx

Circular
Plastic in action

4

Commercially validated technology...

Regenyx
3.3kt p.a. plant in operation

Toyo
3.3kt p.a. plant construction

5

..With blue-chip partners

Project owner

TOYO STYRENE AmSty

Technology

AmSty MITSUBISHI CHEMICAL TEN

Feedstock Owner

Dow CORNING ExxonMobil lyondellbasell

6

Asset-light, ready for rapid scale up

Licensing model

De-risking

Accelerated global enrollment

7

Entering phase of rapid growth

1.2mt p.a.
Plant capacity in pipeline

>6mt p.a.
Cyclix demand in 2030 from existing customers only

SOLVING THE GLOBAL PLASTIC WASTE ENVIRONMENTAL CHALLENGES



PLASTIC HAS TRANSFORMED MODERN LIFE...



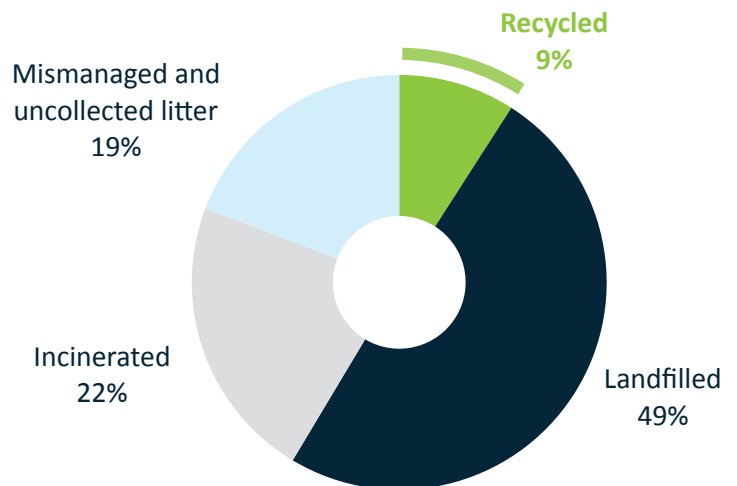
Plastic is arguably one of the most significant human inventions of the past century and has transformed modern life, yet its useful life is short and most of it is discarded after a single use and the waste created has caused massive environmental concern and threatens our planet well into the future.

8bn tons

Of plastic accumulated since 1950

370mt

Of plastic produced per annum



Source: Companies' data, OECD, ResearchGate, UN Environmental Programme, public sources

On a global basis, we have accumulated 8 billion tons of plastics since 1950, and each year another 370 metric tons are produced with only 9% of them recycled. The rest were placed into landfills, incinerated, and/or leaked or mismanaged, thus harming animal life, clogging drains, infiltrating food chains and waters. If nothing is done, some estimate there will be more plastic than fish in the ocean by 2050.

Recycling is largely considered a key solution to plastic waste, with the EU leading the global efforts by setting ambitious targets such as 50% of plastic packaging need to be recycled by 2025, and a 800 euro tax levy imposed for each ton of non-recycled plastic waste. The Recovery Act in the U.S. calls for a \$500 million in recycling infrastructure grant. The industry also gets noticeable buy-ins from leading global brands, as many of them have made significant commitments concerning recycling their plastics content (mostly packaging).

Tightening of regulations is favouring recycling...

EU

- **50% recycling rate** for plastic packaging by 2025
- **EUR800/t tax** on non-recycled plastic waste

UK

- **Tax of GBP200/t** on all plastic packaging with less than 30% recycled plastic

US

- **RECOVERY ACT** called for **US\$500mn** in recycling infrastructure grants

...Supported by recycling commitments of global brand owners

25-50%

Of recycled materials



PEPSICO

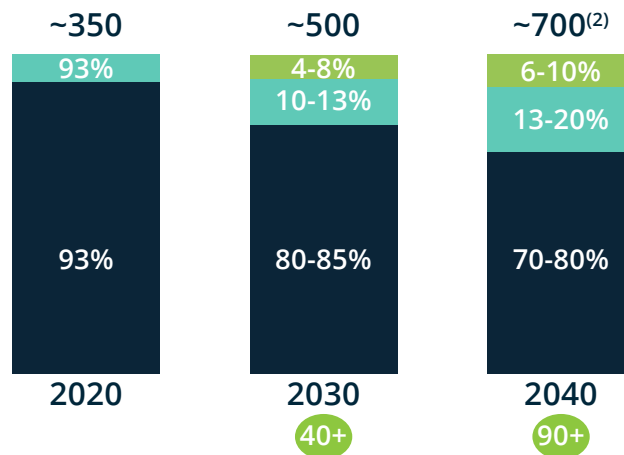


Unilever



CHEMICAL RECYCLING MAKES PLASTIC A CIRCULAR RESOURCE

Today, an overwhelming majority of the 9-10% of plastic being recycled is done by mechanical recycling which involves shredding, grinding, and melting. However, mechanical recycling has disadvantages which limit the technology as it stands today as the process damages the structure of the plastic chains and resulting in lower grade recycled plastics. Hence plastics generally can only be recycled one to two times. Also, mechanical recycling requires clean feed that limits the types of plastics that can be recycled, and mechanically recycled plastics are generally not suitable for food and medical applications.



GLOBAL POLYMER DEMAND 2020-2040⁽¹⁾, mt p.a.



Source: Company data, IHS Markit, McKinsey.
Notes: (1) Polymer demand includes fibers (polyesters and polyamide), excludes rubbers and intermediates. (2) May not sum up to 100% because of rounding. (3) Assuming capital intensity range of US\$1,500 – 3,000 per ton. (4) Assuming 330 working days.

Given mechanical recycling’s limitations, an alternative solution - chemical recycling is born. It addresses many mechanical shortcomings given its high tolerance to contamination, usability of high-quality end products, flexible treatment of mixed plastic waste and wide range of inputs.

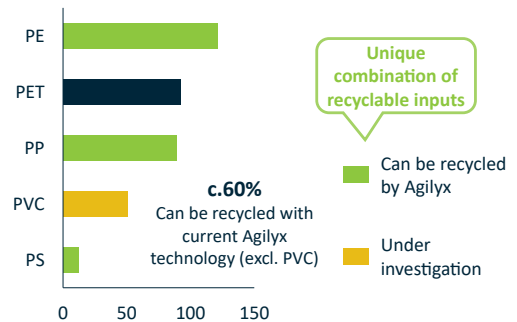
While mechanical recycling will remain a key process in the future, chemical recycling (see diagram above) will likely take off and cover a sizable portion of plastic demand by 2030 and further advance well into 2040. Investments in chemical recycling will increase to \$40 billion by 2030 and \$90 billion by 2040 from a significantly lower level today.

A SIZABLE ADDRESSABLE MARKET

The total addressable market is \$12 billion - \$67 billion* (360-1900 conversion plants, and 20-105mt per annum in feedstock supply and management). On a higher level, Agilyx earns revenue by licensing technology to plastics conversion plants and earns royalty revenue based on volume of feedstock processed.

...With Agilyx being capable of recycling c.60% of polymers on the current market

Plastic market size by polymer type, mt p.a.

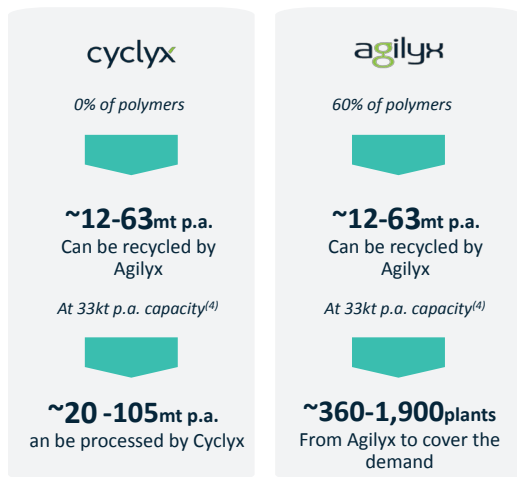


Massive opportunity for Agilyx by 2030

~500mt p.a.
Global polymer demand in 2030

4-21% of demand

~20-105mt p.a.
Delivered by recycling

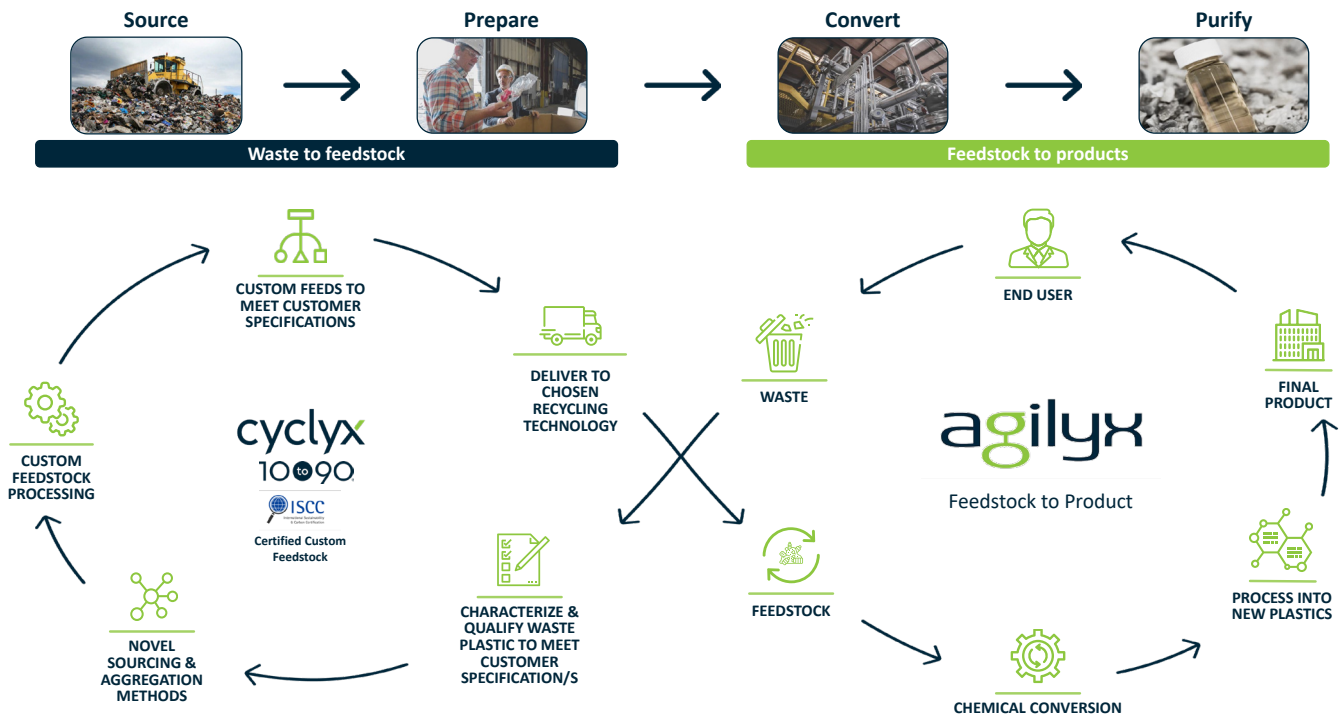


Out of the 5 major types of plastics, Agilyx can recycle 60% of those polymers in the current market.

It is estimated that the global demand for plastics (polymers) will reach ~500 mt a year by 2030, from 370 today. Of that 500 mt, assuming 4-21% will be made from recycling waste plastics, that translates to ~20-105 mt. As illustrated by the previous diagram, Agilyx can recycle 60% of polymers today, translating into ~12-63 mt a year. At a 33k per year capacity, that means there are between 360-1900 plants that Agilyx can license its technology to to enable the recycling process. In addition, Cyclyx (which is the 75% feedstock supply and management JV) can cover the entire plastics universe and can manage and supply 20-105 mt per year in feedstock to plastic makers.

*Agilyx data- The addressable market size is based on the estimates that each plant that has a 33k ton per annum output will generate ~\$35 million of cash flow in royalties and services during the operation phase.

AN END-TO-END SOLUTION W/ FEEDSTOCK MANAGEMENT AS AN ADVANTAGE



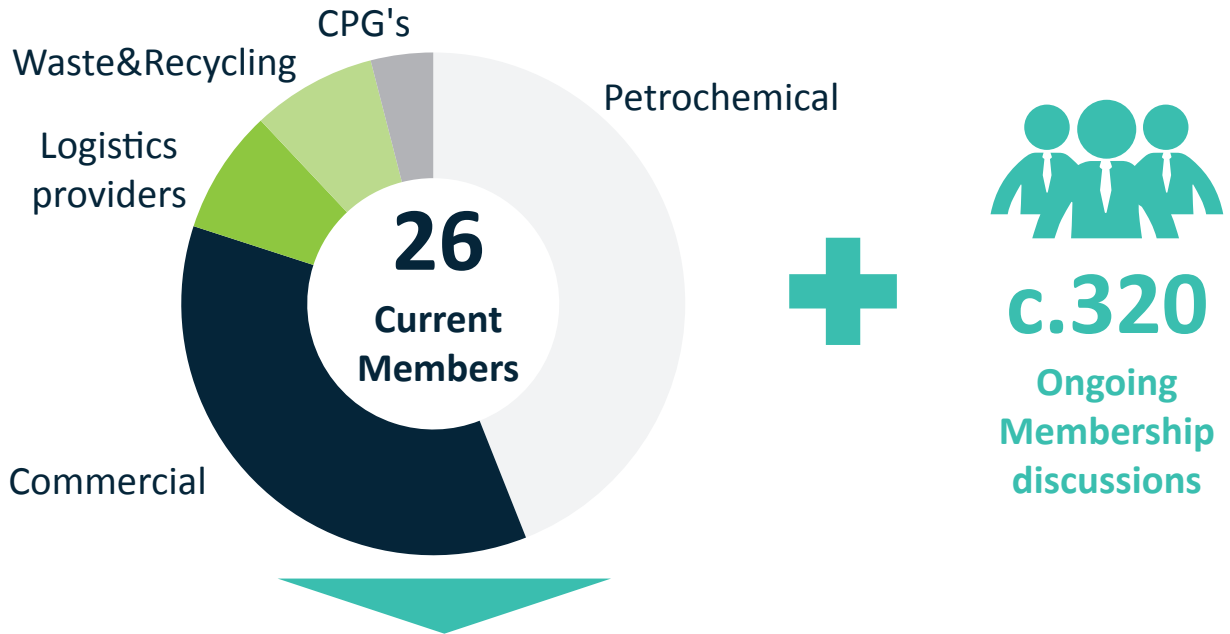
WASTE TO FEEDSTOCK ENABLING

The process starts with Cyclyx (the circle on the left in the above diagram), from which the company sources plastic waste and prepares them into ready-to-recycle feedstock for downstream recycling process.



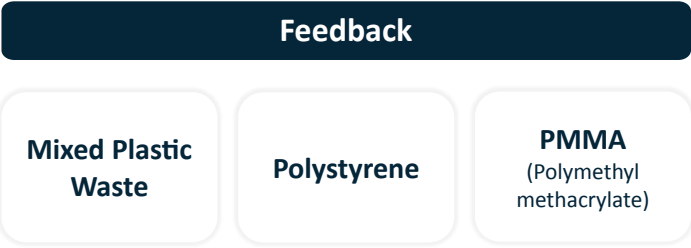
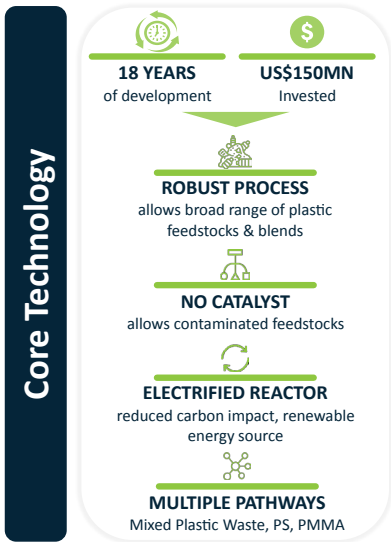
What makes Cyclyx unique is its ability to leverage what is probably the most comprehensive chemical conversion database for chemical characterization of waste plastics, the ability to develop custom feedstock recipes, and set up new and custom supply chains, and its consortium to involve stakeholders recycling partners, technology partners, suppliers of plastics waste, waste management companies, municipalities and/or regulatory agencies, global CPG or key brand owners) in the ecosystem. The size and growth of the consortium is a good proxy of chemical recycling interest intensity over time, as well as a driver for Agilyx's growth. Currently, there are 26 members in the consortium and there are 320 ongoing discussions.

MEMBERSHIP DEVELOPMENT



DIFFERENTIATED FEEDSTOCK TO PRODUCT CONVERSION

The right circle of the previous diagram is the Agilyx part of the process where the sourced, selected and prepared feedstock from Cyclix is converted into end products. The actual process is known as pyrolysis and there are many benefits; as no catalyst is required in the process, a broad range of feedstocks (including contaminated material) can be used. Also, the electrified reactor that is deployed in the conversion process can reduce carbon impact. The above diagram illustrates the feedstock types, the current technology, and engineering partners and selected customers by types.



Mixed plastic waste is one of the most difficult types of plastic to recycle, but the opportunity is massive.



There is also a sizable market for styrene/polystyrene.



SIZING UP AGILYX AGAINST ITS COMPETITORS, it wins in all criterias. This includes the asset light attribute from a risk perspective, technology, feedstock flexibility, and upstream (waste-to-feedstock enablement) integration.

Company	Asset light	Technology	Feedstock variability	Operating facilities	Upstream integration
agilyx	✓	Pyrolysis	●	PS: since 2018 MWP: since 2011	Via Cyclyx
Peer	✗	Pyrolysis w/ catalysis	◐	Since 2020	✗
Peer 2	✗	Pyrolysis	◑	✗	✗
Peer 3	✗	Selective depolymerisation	◐	Since 2018	✗
Peer 4	✗ ⁽¹⁾	Pyrolysis	◐	Since 2014	✗
Peer 5	Long-term intention	Physical purification	◑	✗	Coordination with waste producers, feedstock-processing
Peer 6	✗	n.a	◑	✗	✗

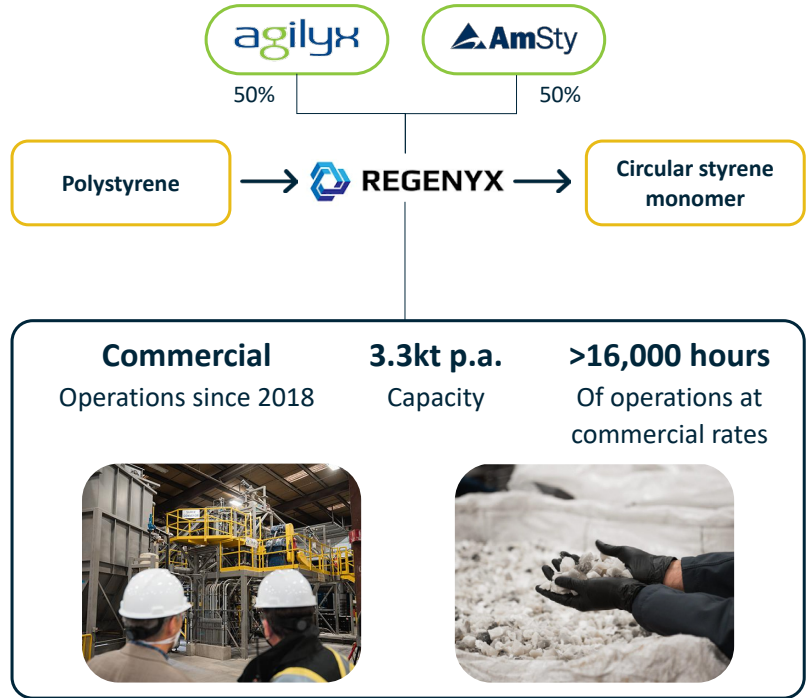
TECHNOLOGY IS PATENTED, PROVEN AND COMMERCIALY VALIDATED

The company technology is well protected by 17 technology patents as of 12/27/2022 and launched the first commercial closed loop plastic-to-plastic facility (Regenyx) in 2018.

NO. PATENT SUMMARY

1. System for recycling plastics
2. Systems and methods for recycling plastics
3. Systems and methods for recycling plastic
4. Devices, systems and methods for recycling plastic
5. Devices, systems and methods for recycling plastic
6. Methods for recycling plastics and treating pyrolysis vapors
7. Methods for conditioning synthetic crude oil from pyrolysis
8. Methods and systems for conditioning synthetic crude oil
9. Methods and systems for conditioning synthetic crude oil
10. Methods and systems for conditioning synthetic crude oil
11. Methods and systems for conditioning synthetic crude oil
12. Systems and methods for recycling waste plastics, including polystyrene
13. Systems and methods for recycling waste plastics, including polystyrene
14. Systems and methods for recycling waste plastics, including polystyrene
15. Systems and methods for recycling plastic
16. Systems and methods for recycling plastic
17. Systems and methods for conditioning synthetic crude oil

It launched the first commercial closed loop plastic-to-plastic facility (Regenyx) in 2018 with Amsty (owned by Chevron Phillips).



Significant capital
Committed by Toyo on top of core equipment creating strong revenue potential for Agilyx



Long-lead time equipment
Ordered right at the start of the construction phase

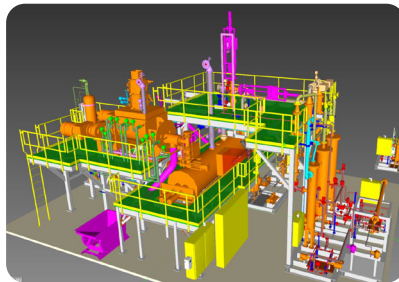


Cash already received by Agilyx
US\$7.2mn by June with further US\$1.4mn expected in H2 2022



Commissioning targeted
For Q1 2024

3D view of 3.3kt p.a. plant



The Toyo Styrene facility is the first pure licensed polystyrene plant and is currently beginning the initial construction process.

A ROBUST MEMBER, PARTNER & INVESTOR BASE - A FUTURE GROWTH ANCHOR

PROJECT OWNERS

 **TOYO STYRENE**

 **AmSty**

TECHNOLOGY PARTNERS

 **AmSty**  **MITSUBISHI CHEMICAL**

 **TEN** **TECHNIP ENERGIES**

FEEDSTOCK PARTNERS

 **Dow**  **ExxonMobil**
 **CORNING**  **Lyondellbasell**

INVESTORS

 **Virgin**  **ExxonMobil**

CYCLIX CONSORTIUM MEMBERS

 **agilyx**  **ExxonMobil**  **CORNING**  **Dow**  **AmSty**  **rasella**  **Braskem**  **UNION PACIFIC** 

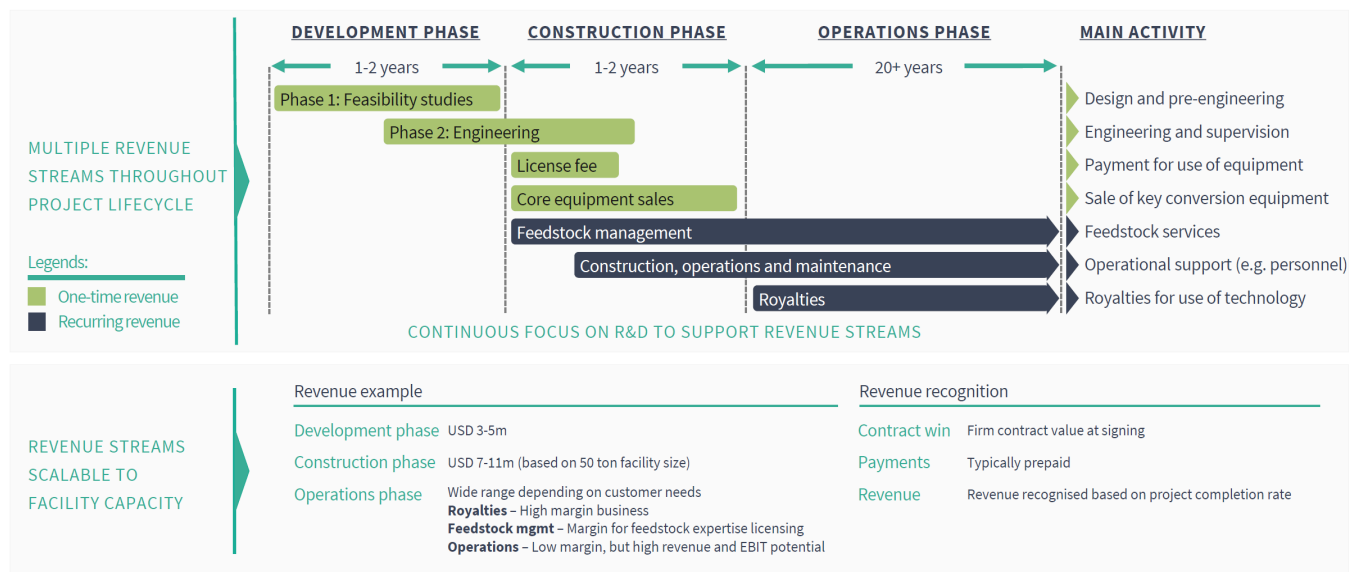
 **SUNCAST**  **MILLIPORE SIGMA**  **CHEVRON PHILLIPS**  **Lyondellbasell**  **TENCATE GRASS**  **North American Plastics**  **SONOCO**  **BNSF RAILWAY**  **ADS**
Advanced Drainage Systems, Inc.

 **BIOGREEN**  **NOVA Chemicals**  **INEOS STYROLUTION**  **سابك** **sabic**  **STERILIS SOLUTIONS**  **Reynolds Consumer Products**  **Sealed Air**

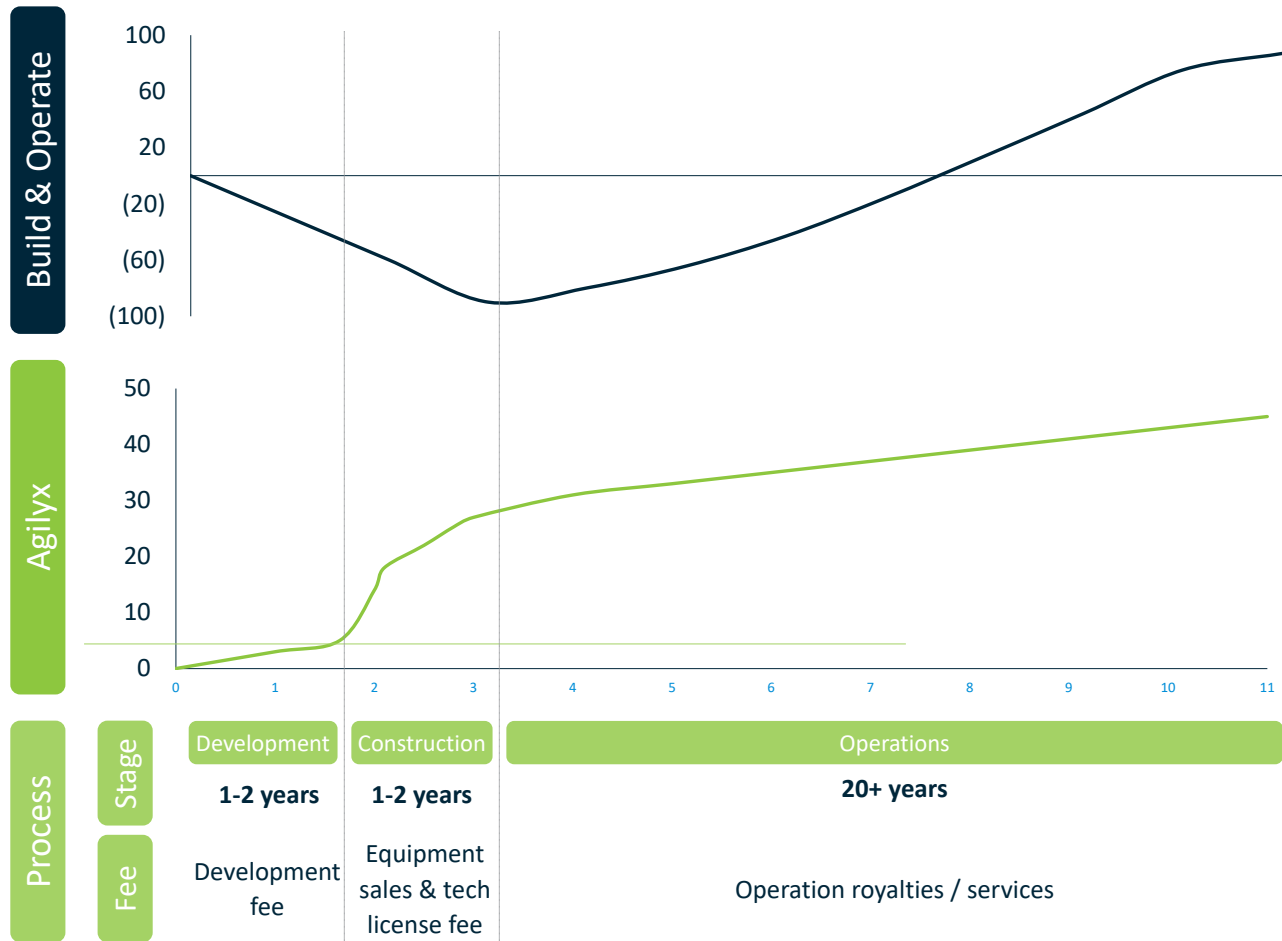
DEPLOYING AN ASSET LIGHT MODEL THAT IS READY TO SCALE

Agilyx does not own or operate plants other than its Tigard plant, rather, it licenses technology to enable the recycling process used in these plants and generates licensing revenue based on plant capacity and royalty revenue based on volume of feedstock processed in those plants.

These are the key revenue drivers and recurring revenue streams for the company (note that it also generates other one-time revenue such as fees for feasibility studies and equipment sales). The asset light model enables faster scaling, as it requires substantial less upfront capital investments by Agilyx, and it also significantly reduces cash flow risks from the onset and decreases commodity pricing risks (this is more of a risk as the industry matures years down the road).



ASSET-LIGHT BUSINESS MODEL WITH FRONT-SKEWED CASH FLOW STREAM



Attractive economics for plant owner

US\$100-200mn
Capex

12-20%
IRR

Advantages of business model

- Low capital intensity
- Cash-flow positive from the outset
- Not dependent on oil price
- Potential accelerated roll-out
- Risk mitigating

RAPID GROWTH TO 2030

For the first nine months of 2022, revenue was \$12.7 million, expanded from \$1.4 million in the same period in 2021. With the current project pipeline and growth prospects, the company has a 1,100kt per year recycling capacity potential and 6,000kt per year feedstock volume potential by 2030. Both are key drivers for revenue growth for the next eight years.

CURRENT PIPELINE



Translate into 1,100 kt pa in total capacity potential by 2030



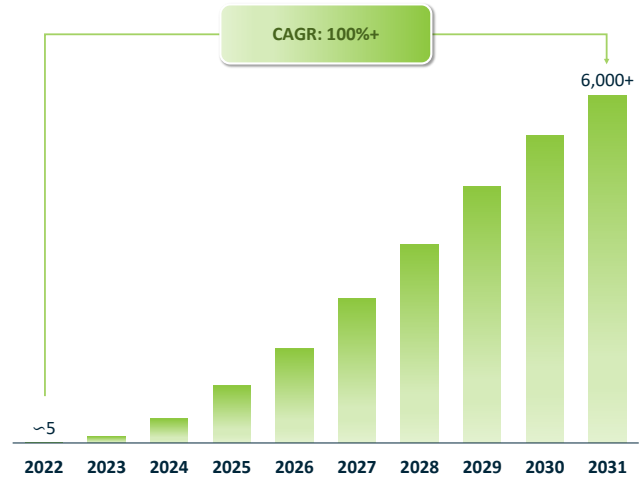
...and 6,000+ kt pa feedstock volume potential by 2030

Recycling commitments of selected members

<p>Braskem</p> <p>Sales of recycling-based products: 0.3mt p.a. By 2025 1.0mt p.a. By 2030</p>	<p>Dow</p> <p>1.0mt p.a. To be collected, reused or recycled by 2030</p>
<p>ADS</p> <p>0.5mt p.a. Of recycled material to be used by 2032</p>	<p>lyondellbasell</p> <p>2.0mt p.a. Of recycled and renewable based polymers by 2030</p>
<p>سابك sabik</p> <p>10bn PET bottles to be recycled by 2030</p>	<p>SONOCO</p> <p>85% Of production volumes to be recycled by 2025</p>

Forecast demand from existing customers

kt p.a.



2031 demand represents only ~1% of the addressable market