



## 革新的なリチウム製造技術による事業化

## Commercialization of Innovative Lithium production technology

ユニバーサル マテリアルズ インキュベーター株式会社

Universal Materials Incubator Co., Ltd.

## Company Outline

DATE 22DEC2022

No. 2



- Company name : Universal Materials Incubator Co., Ltd.
- Capital : 42 million yen
- Established : October 6, 2015 (Spun off from INCJ)
- Head Office : Tsukiji, Chuo-ku, Tokyo, Japan
- Representative : Shosuke Kiba (Representative Director)

## UMI I Fund

: 10 billion yen  
(From 2016)

## UMI II Fund

: 9.5 billion yen  
(From 2019)

## UMI III Fund

: 6.5 billion yen\*  
(From 2022)

## Decarbonization Fund

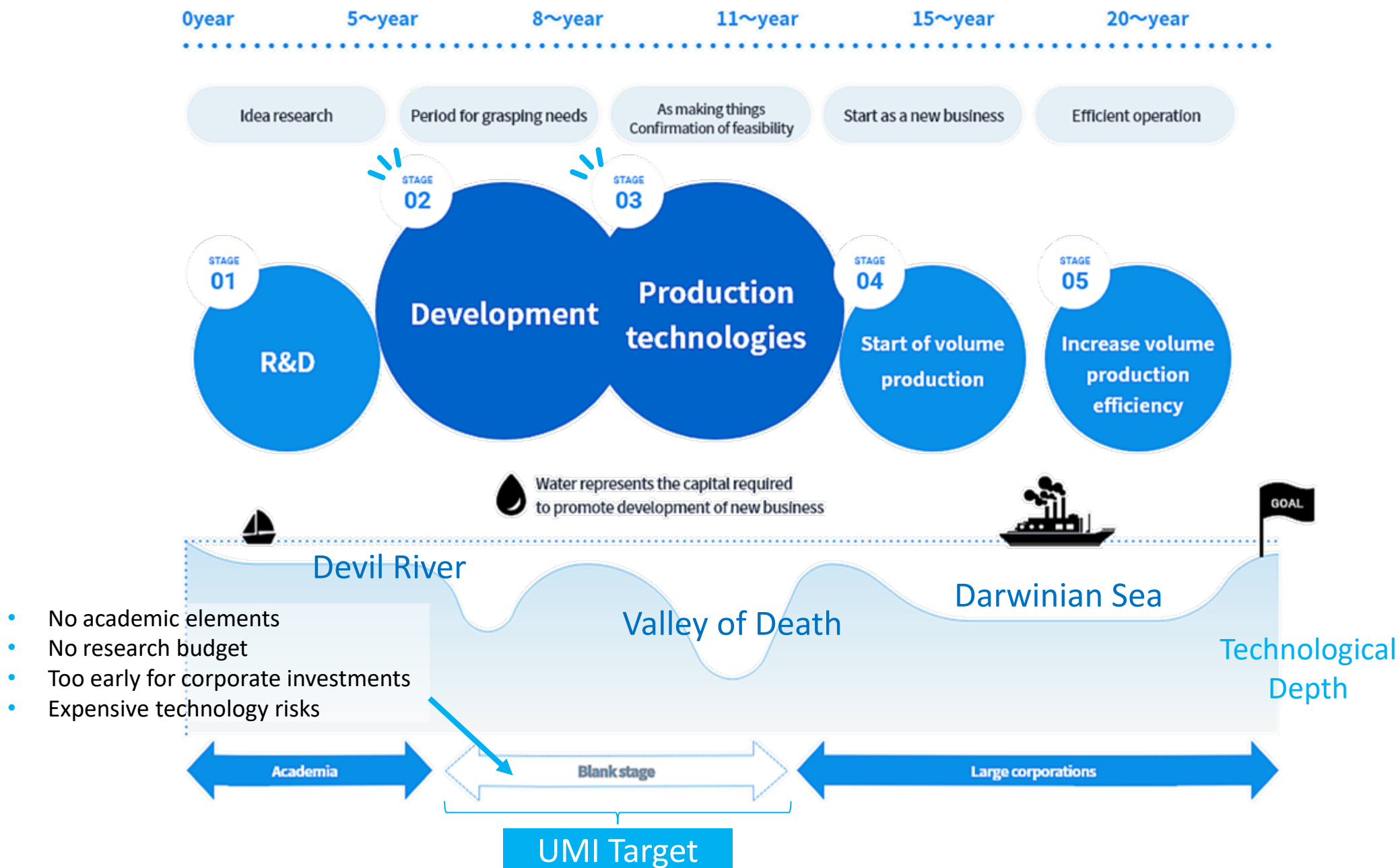
: —\*  
(From 2022)

\*at the present time

## Investment Strategy

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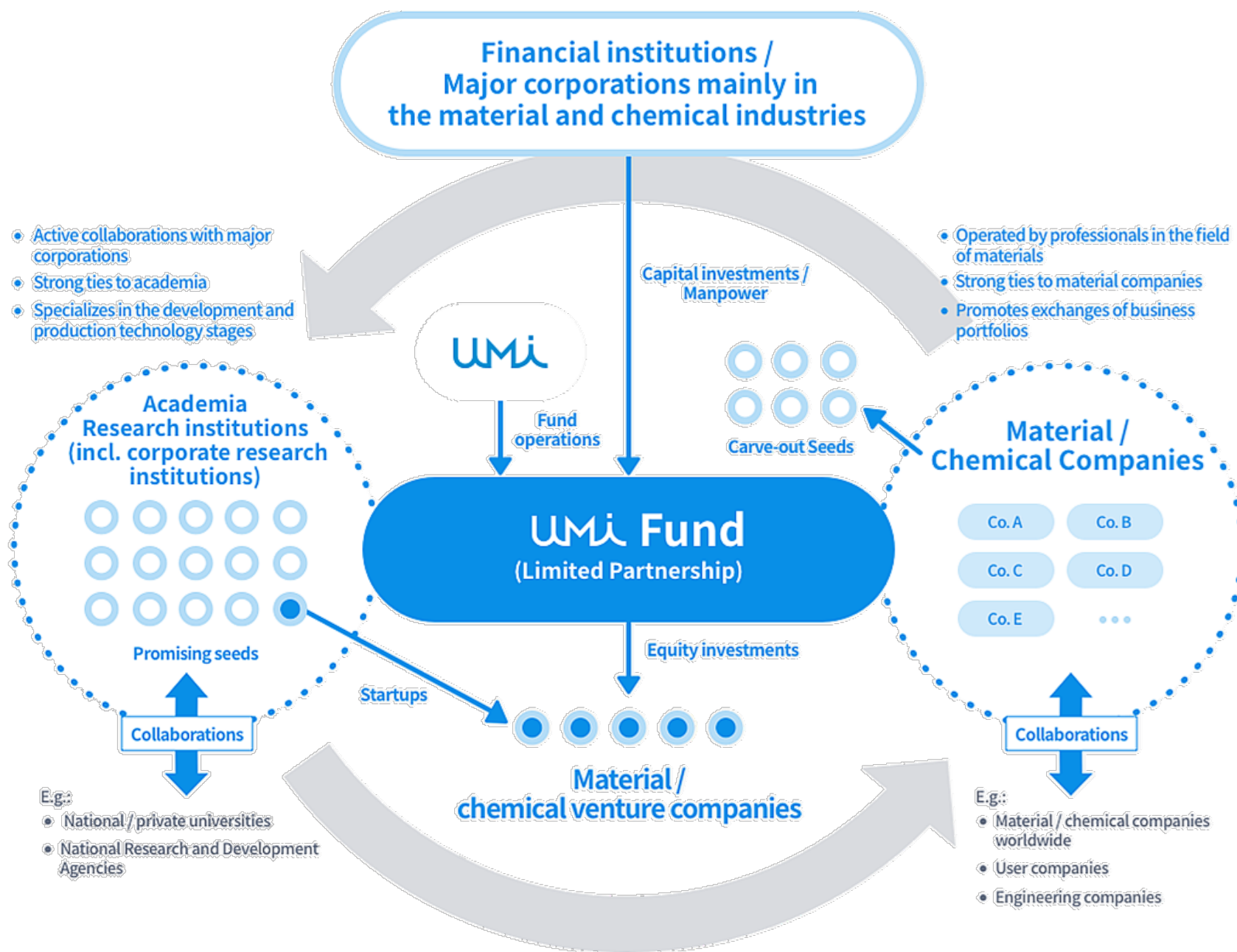
No. 3



## Industry platform

DATE 22DEC2022

No. 4



## Strategic Partners

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No. 5



(UMI I)



(UMI II)



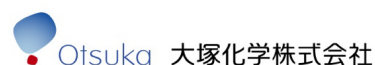
(UMI II)



(UMI I &amp; II &amp; III)



(UMI III)



(UMI II)



(UMI II)



(UMI II)



(UMI I &amp; II &amp; III)



(UMI I &amp; II)



(UMI II &amp; III)



(UMI I &amp; II)



(UMI I)



(UMI II &amp; III)



(UMI III)



(UMI III)



(UMI II)



(UMI III)



(UMI I &amp; II &amp; III)



(UMI II)



(UMI III)



(UMI III)



(UMI II)



(UMI III)



(UMI I)



(UMI I &amp; II)



(UMI II)



(UMI I &amp; II)



(UMI II)

※五十音順

## Subsidy adopted

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No. 6



研究成果展開事業 大学発新産業創出プログラム

# START

Program for Creating **ST**artups from **A**dvanced  
Research and **T**echnology

- Purpose : Commercialization
- Period : 2019～2022
- Budget : 30 Million yen/year



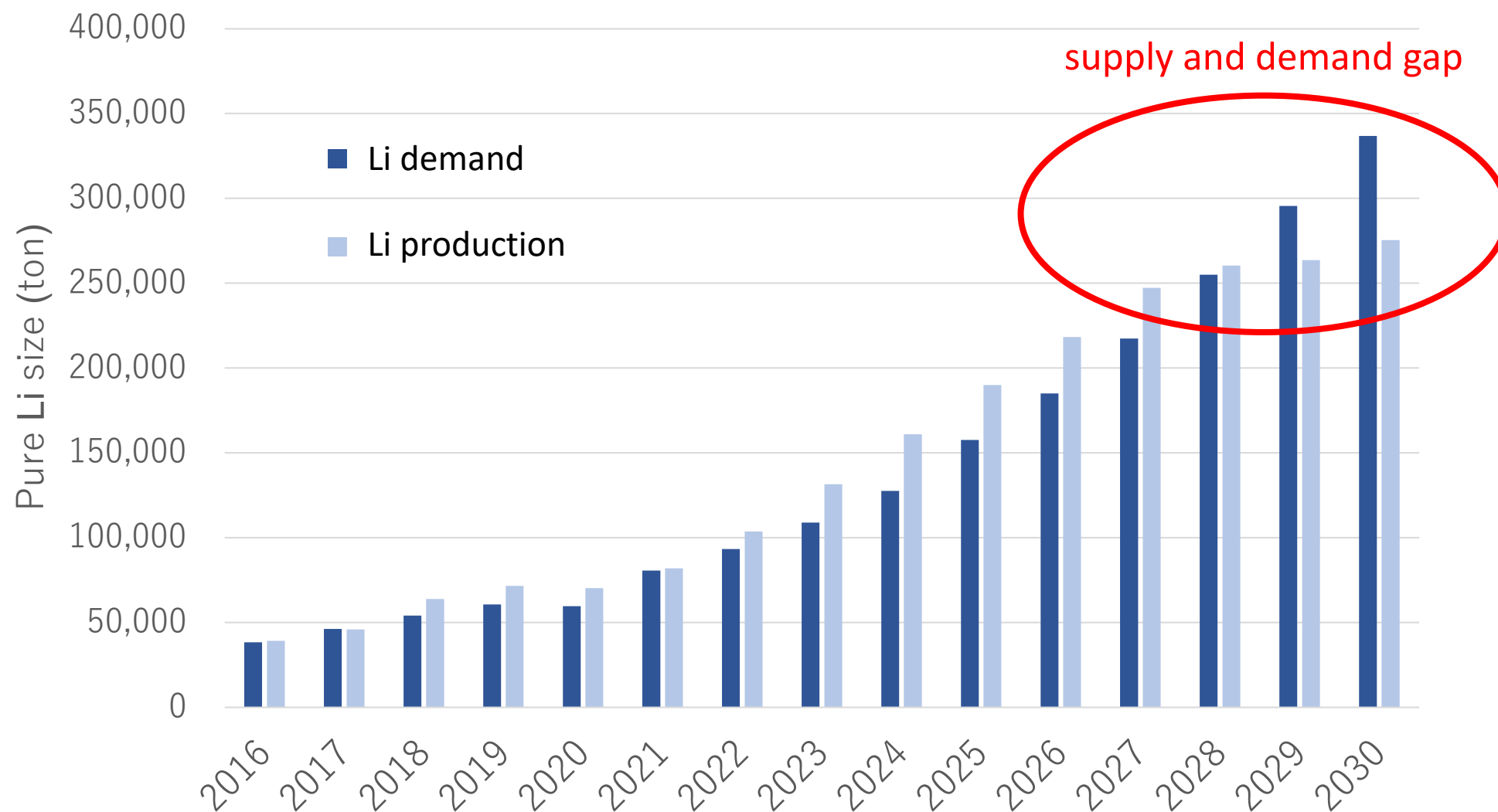
Business  
Development

Technology  
Development

## Forecast

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No. 7

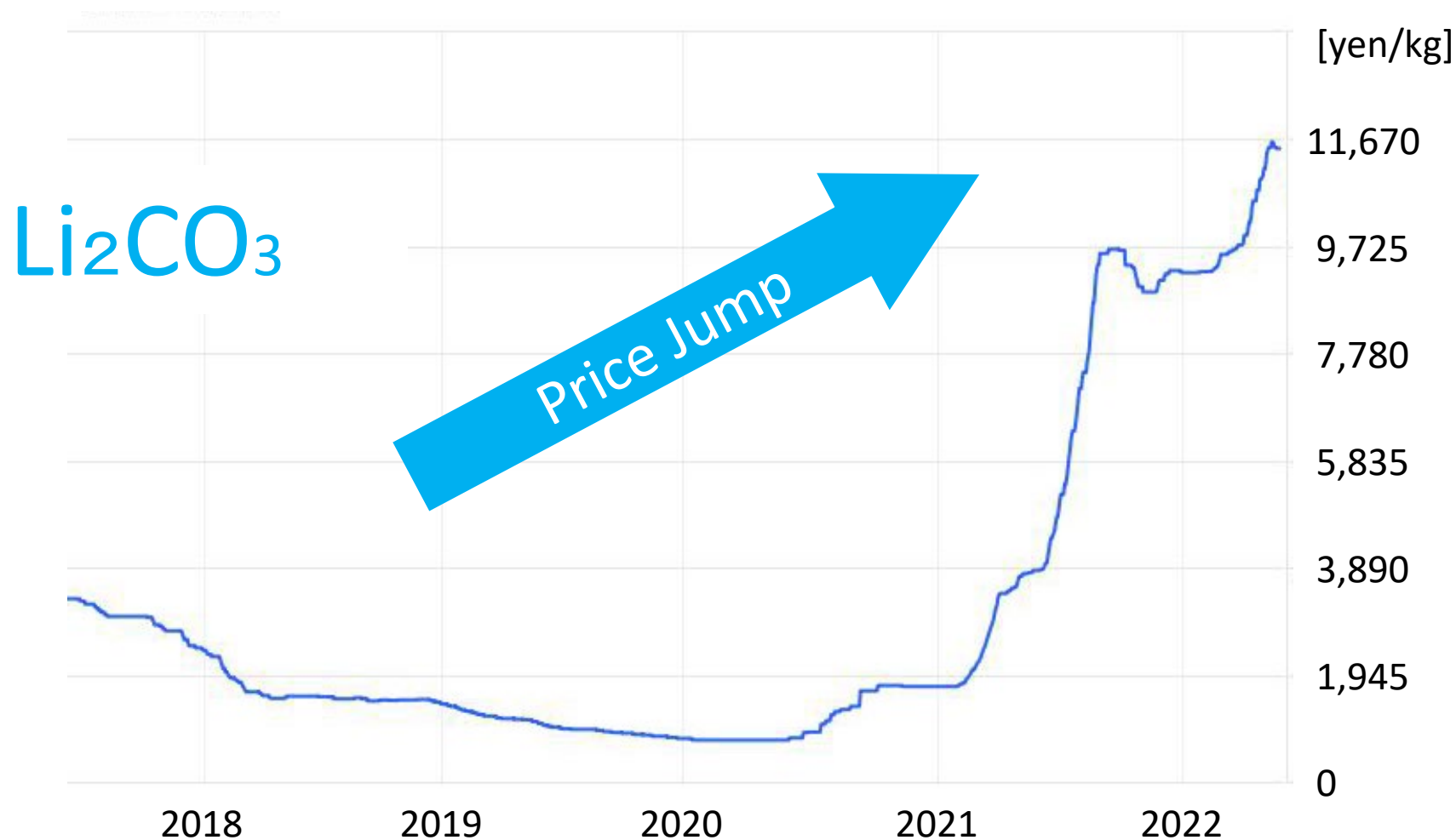


## Market Price

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No. 8

## ■ Lithium Carbonate Market





## Industrial technology

DATE 22DEC2022

No. 9

### ■ Brine Method

- Limitation
- Li concentration



Salt Lake



Evaporation

- Long time Drying



Precipitation

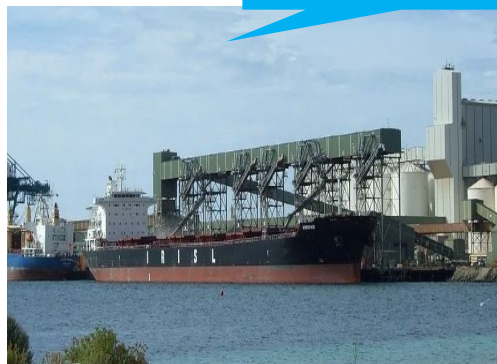
### ■ Mining Method

- Quality



Mining

- Transport Cost



Export

- High Energy
- Much Reagent



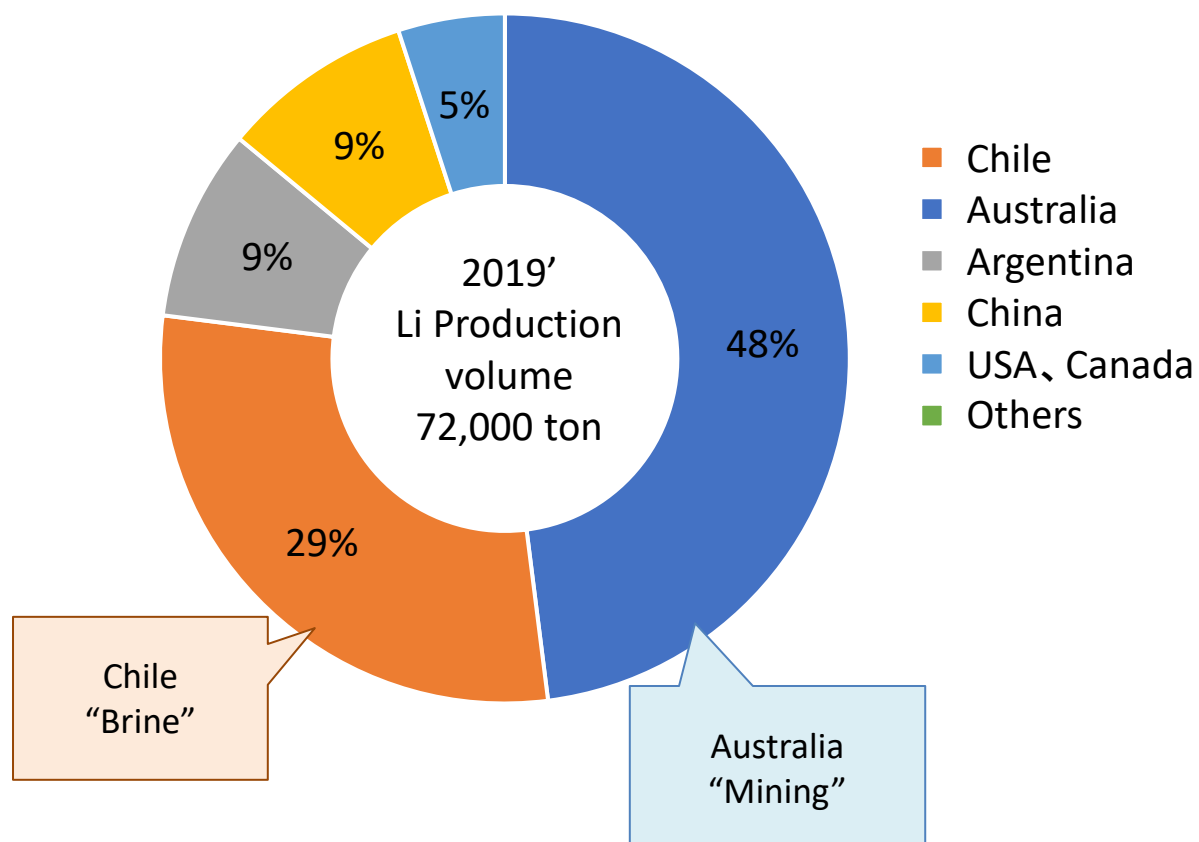
Purification

## Production volume and Reserves

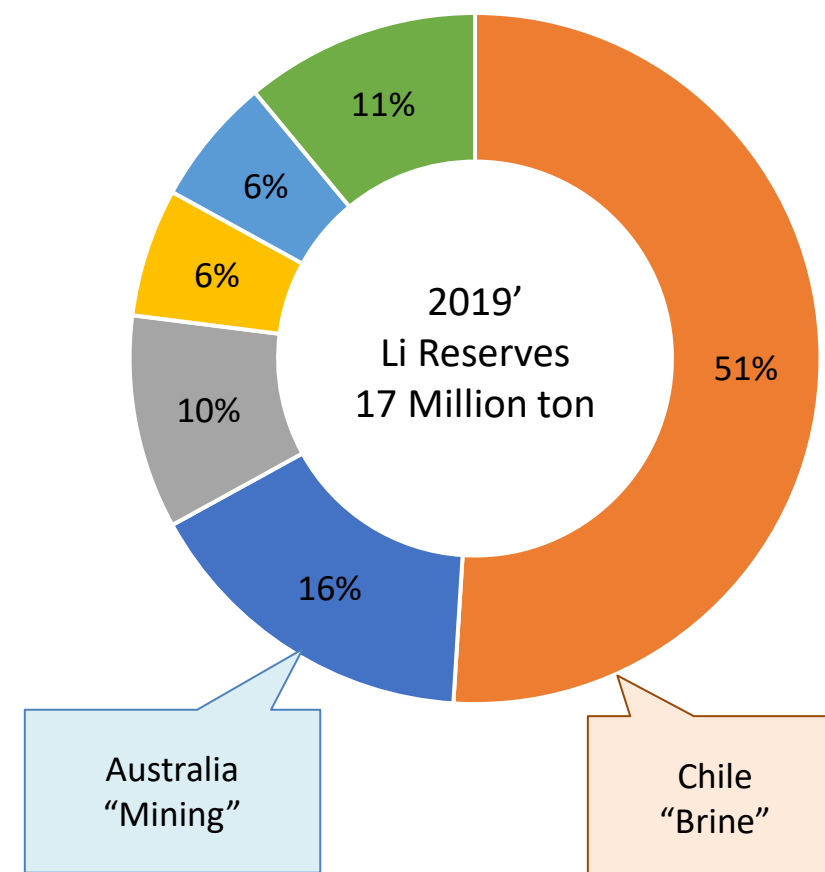
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No. 10

## ■ Production volume



## ■ Reserves



## Unique technology

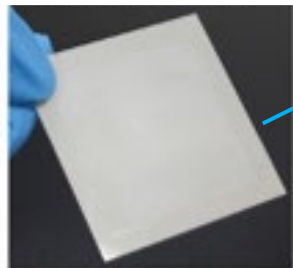
DATE 22DEC2022

No. 11

## ■ Researcher

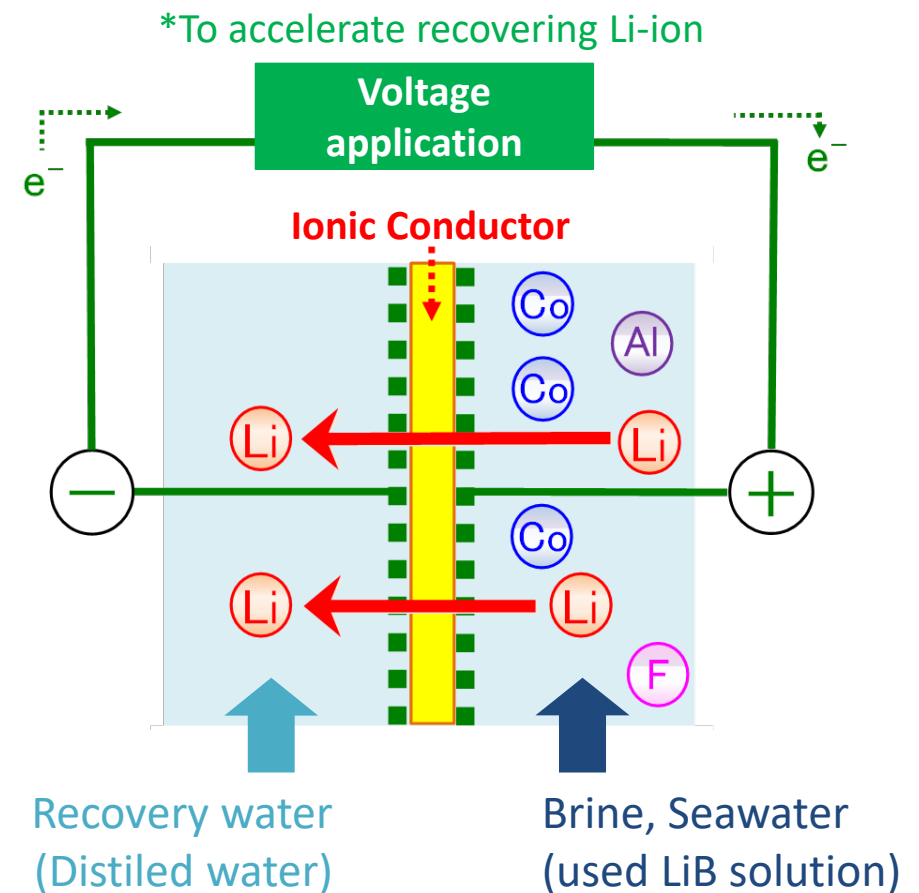


## Ionic conductor



$\text{La}_{0.57}\text{Li}_{0.29}\text{TiO}_3$   
Separator membrane

- **Fast**  
Rapid recovery and purification of Li from brine.
- **High purity (99.99%)**  
Selective recovery of lithium enables producing high-purity lithium compatible with battery grade.

Lithium Separation Method  
by Ionic Conductor**LiSMIC**

## Equipment scale-up

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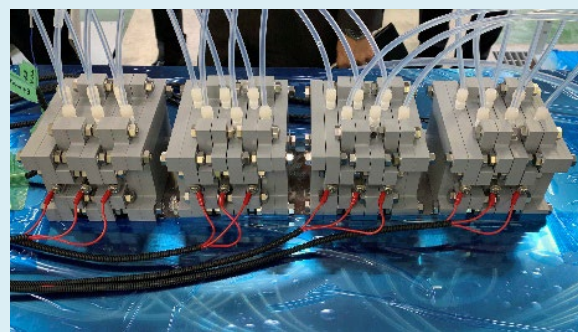
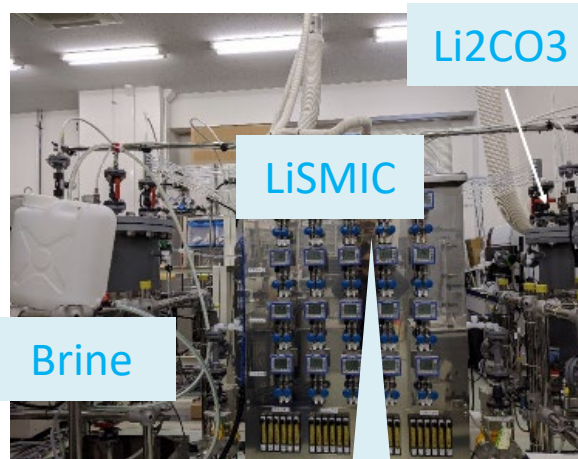
No. 12

## Academia R&amp;D

Lab validation

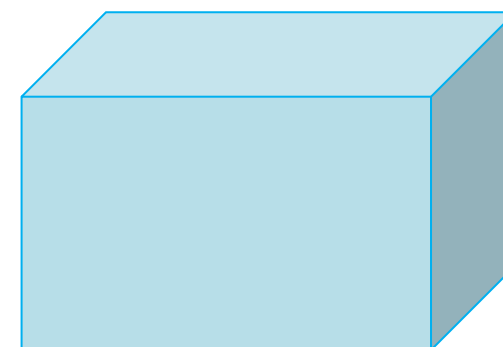
Li production scale:  
Some g/year

Small-scale continuous operation

Li production scale:  
1 kg/year

## Start-up

Bench plant scale

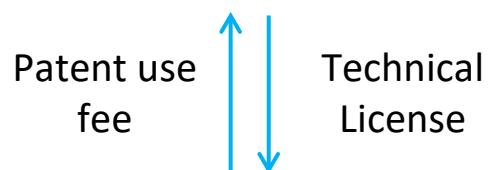
Li production scale:  
50~500 kg/yearThere are many challenges  
to scaling up!



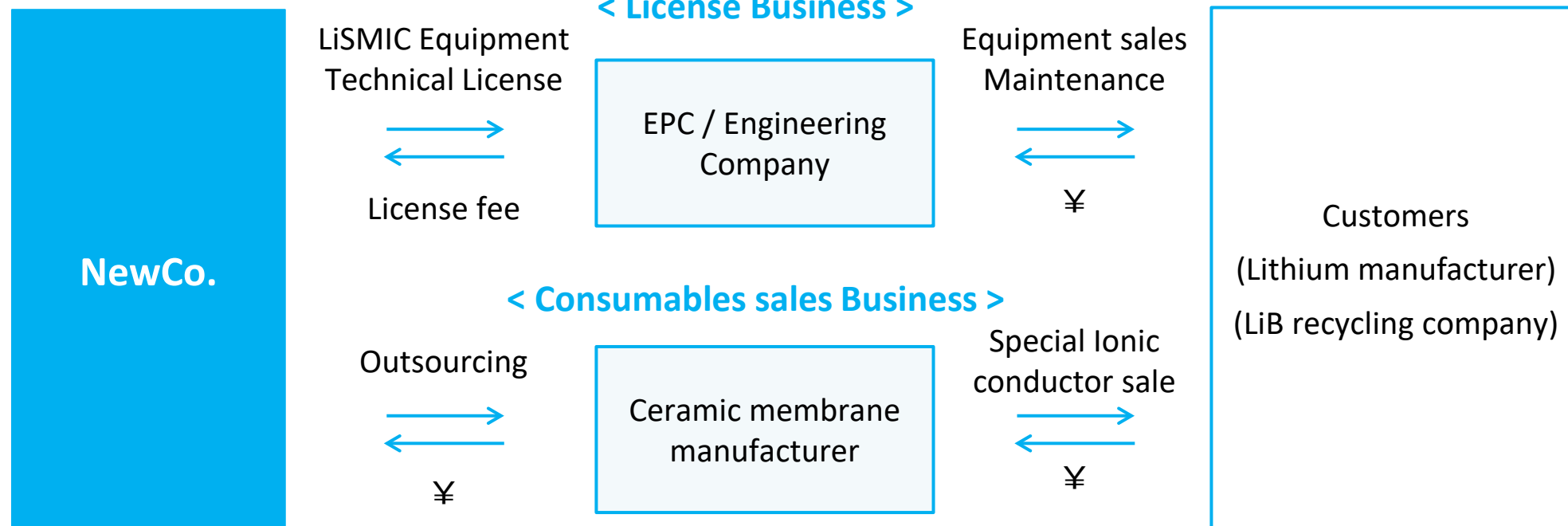
## Business Model

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No. 13

**“Benefits”**

- high efficiency settlement
- High purity / High quality
- Low cost



## Partnering

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No. 14



¥ ↑ ↓ Licensing technical support



↓ Investment Management support

NewCo.

Joint Development (Investment) ↑ ↓ Licensing Outsourcing

Joint Development (Investment) ↑ ↓ New Technology Merits

## Technical Development partner

Contracted membrane manufacturer

Equipment development

Ceramic membrane manufacturer

EPC company

Equipment manufacturer

Engineering Company

## PoC Partner ▪ Potential Customers

Domestic

Overseas

Cathode material manufacturer

Major Lithium manufacturer

Battery manufacturers

Lithium drainage providers

## Business Development Schedule

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No. 15

Found NewCo.

technological  
development

## Technology development milestones

- Improved ion conductor membrane performance
- Accumulated know-how on lithium recovery operation

Partnering

## Tentative Partner

- Equipment design, construction, performance test
- Manufacturing Ion conductor membrane

## PoC

- Scale-up plant
- Design, construction, performance test

Business

## Determination of potential clients

Discussion with potential customers

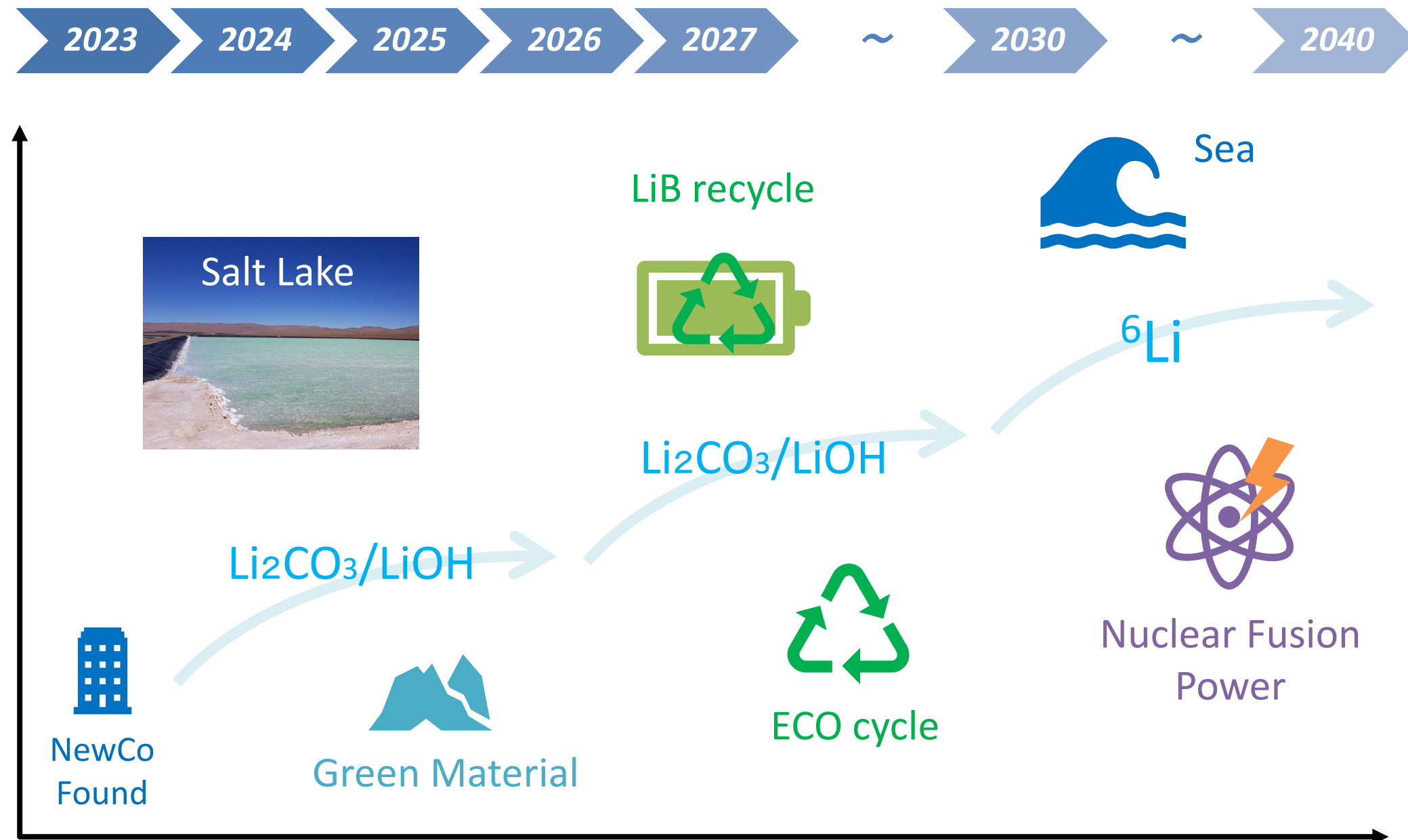
## Commercial Adoption

- Scale-up plant
- Construction, performance test

## For the Future

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No. 16





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