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# Financing for Carbon Reduction & Transferring Technologies to SMEs by KOTEC

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Carbon Neutral Promotion Group



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**I**

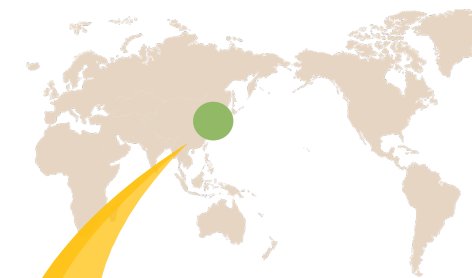
**About KOTEC**

## 01 KOTEC

## Establishment

Established under the Special Law in 1989

- ✓ KOREA TECHNOLOGY CREDIT GUARANTEE FUND ACT
- ✓ Non-Profit Organization (No Shareholders)
- ✓ Contributions from Government & Financial Institutions



## Objective

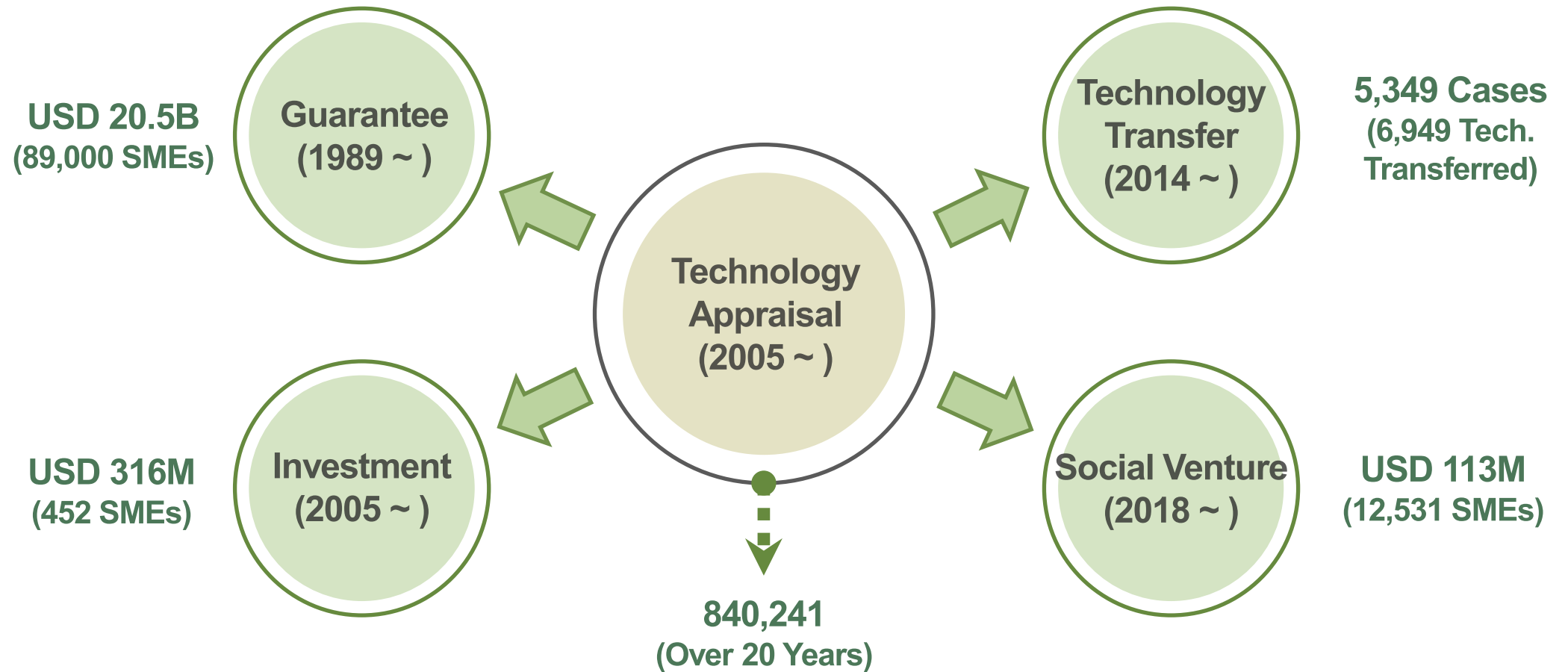
Contributing to the National Economy

- ✓ By Providing Financial Supports to Technology Innovative SMEs



8 Regional HQ, 86 Branches, 1,485 Employees(295 PhDs, 951 Experts)

## 02 Major Businesses



# 03 International Cooperation Projects

**EC 'InnoRate' Project (2019-2021)**

**EU (2012)**

IPF report "very structured and formalized Technology Appraisal System"



**Technical Assistance (WB)  
Technical Cooperation (IDB)**



**Knowledge Sharing Program (KSP)**

**Thailand (2017)**



**Vietnam (2016)**

**Peru (2018)**



**European Investment Bank (2018)**

The global best practice in the assessment of technology and market



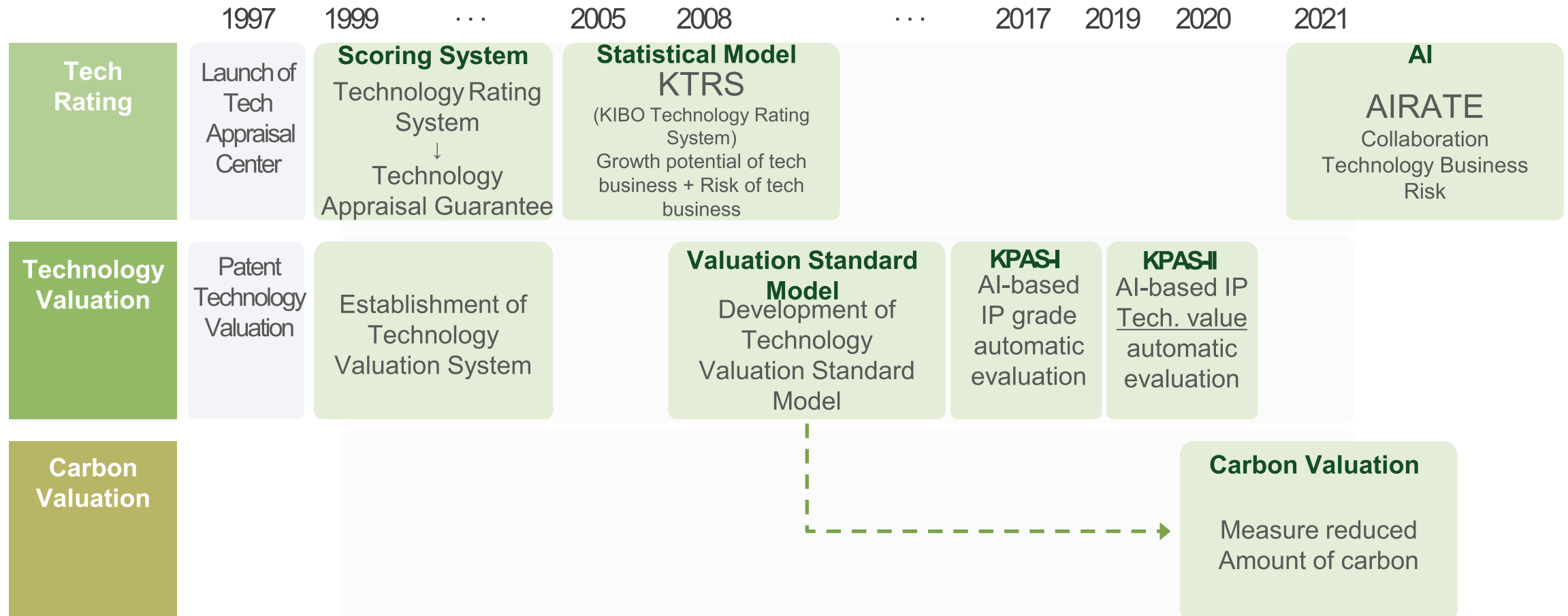
CHAPTER

**II**

**Financing for  
Carbon Reduction**

# 01 History of Technology Appraisal System

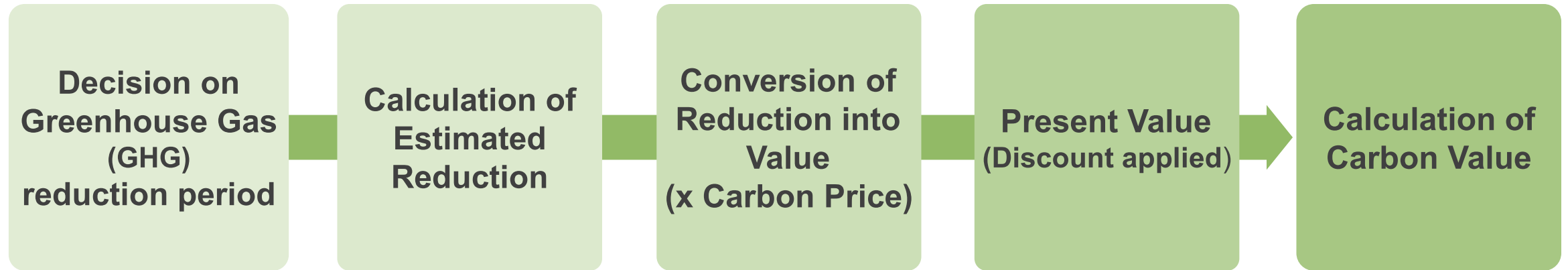
## Evolution of KIBO's Technology Appraisal System (Since 1997)





# 02 Carbon Valuation Model

## Carbon Valuation Process



## Evaluating the Carbon Value of Carbon-Reducing Technology Business

$$\text{Carbon Value} = \sum_{t=1}^n \frac{\text{Reduction in GHG}_t \times \text{Carbon Price}}{(1 + \text{discount rate})^t}$$

(n = Period for calculating reduction in GHG, Reduction in GHG<sub>t</sub> = reduced amount of greenhouse gas in year t, Carbon Price = Carbon Emission Allowances PRICE on the Korea Emissions Trading System)

# 03 The Process of Guarantee for Green Tech.-Driven SMEs

## KTRS + CVM based Guarantee

### Technology Rating System(Legacy Approach)

#### Appraisal Indicators

Employer Competency, Technology Infra,  
Climate Technology Competitiveness, etc.

#### Appraisal Result(Example)

B grade → Guarantee support is feasible

### Carbon Valuation Evaluation

#### Evaluation Indicators

Value for GHG Reduction

#### Evaluation Result(Example)

Reducing about 192,825 ton CO<sub>2</sub>-eq  
→ Carbon Value 709,000\$

Maximum Limit of Guarantee: 1,000,000\$

+

Reduced Carbon Value 709,000\$

Max. Limit of Guarantee Support  
1,709,000\$

# 04 CVM-Involved Technology Guarantee Support

## Eligible Companies for Guarantee Support

<b>Power Generation</b>	Promoting or operating an approved project for new and renewable energy power generation business and development activity
<b>Commercialization</b>	Manufacture/commercialize technologies related to renewable energy
<b>Self-Reduction</b>	Purchase/replace facilities to reduce GHG of the company
<b>External-Reduction</b>	Manufacture/commercialize technology product that contribute to reduce GHG

### Support Scale

**KRW 500 billion (\$500 million) in each year**

Year	2022	2023	2024
Amount	\$500,000,000	\$500,000,000	...(ing)

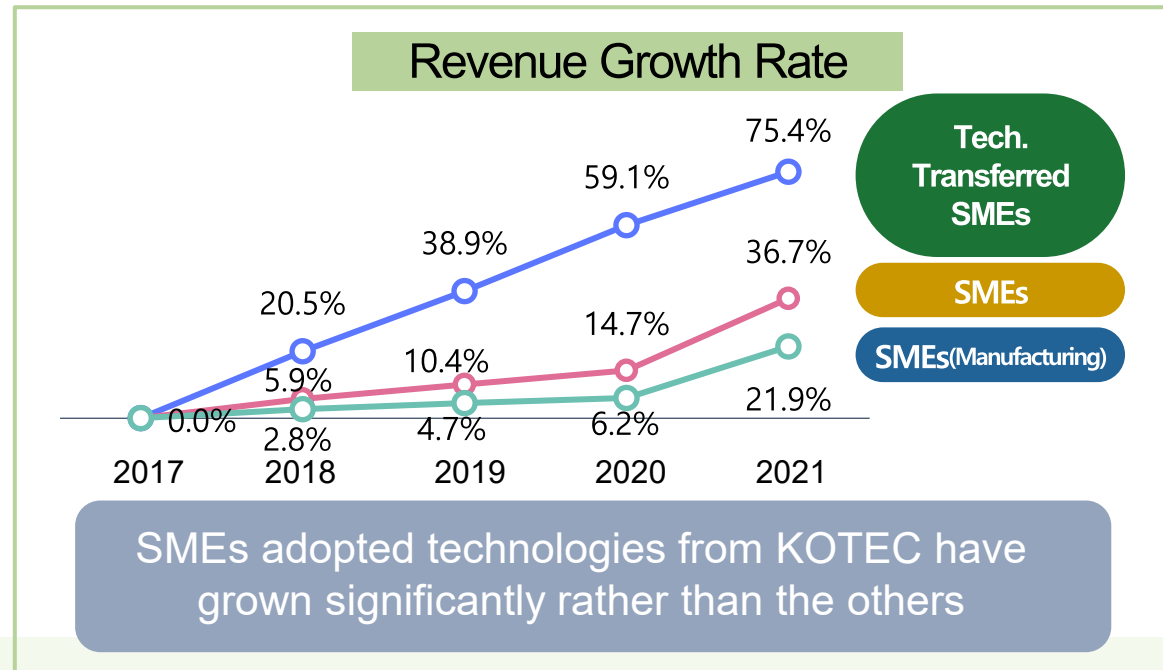
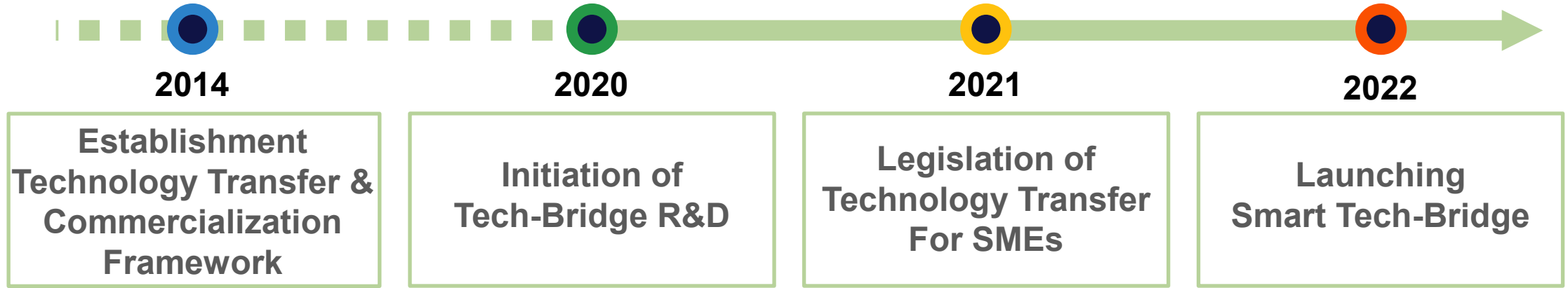


CHAPTER

**III**

**Technology Transfer  
Services**

# 01 History of Tech. Transfer in KOTEC



# 02 Technology Transfer Framework

## On&Off-Line Hybrid Tech. Transfer and Commercialization Framework

### On-Line Platform

<Newly Launched in 2022  
Adopting AI based Technology>



### Off-Line Platform

<Contact Points for Collecting Tech. Demand + Interagency Networks>

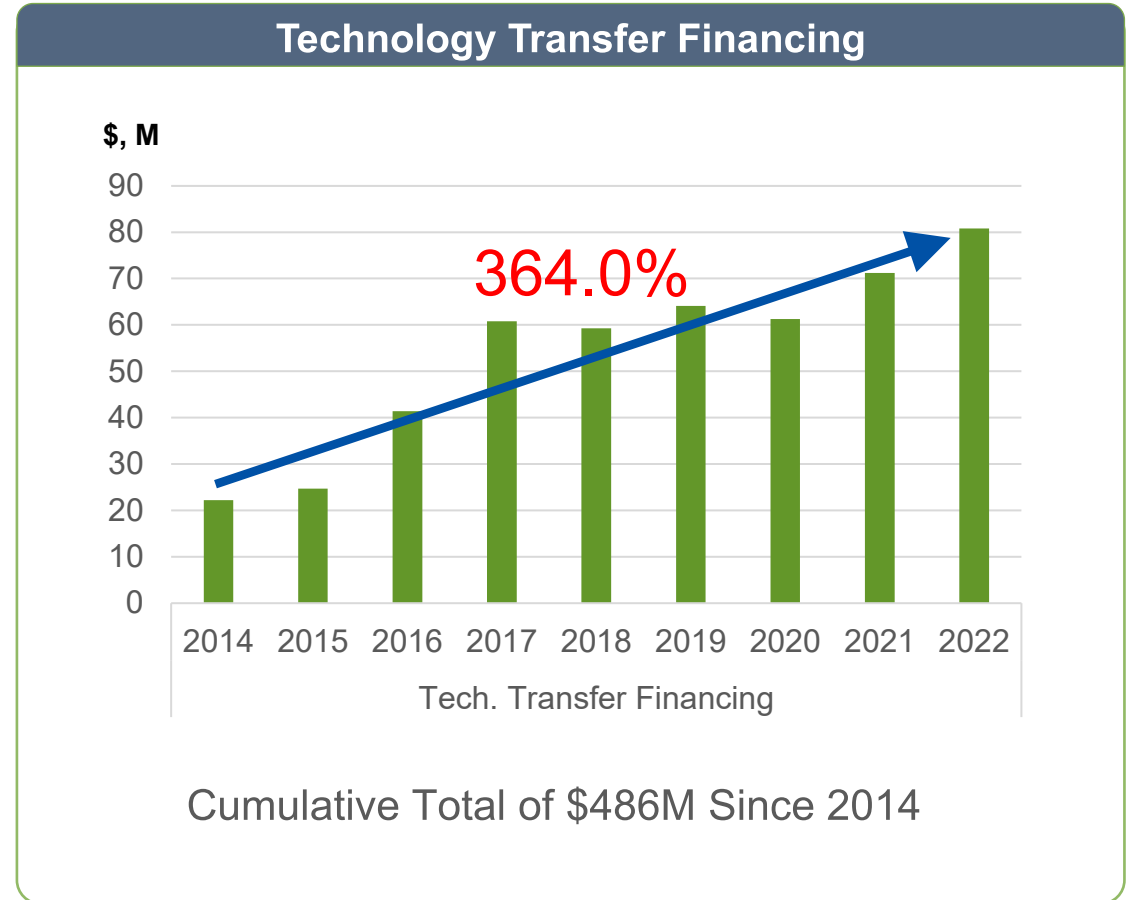
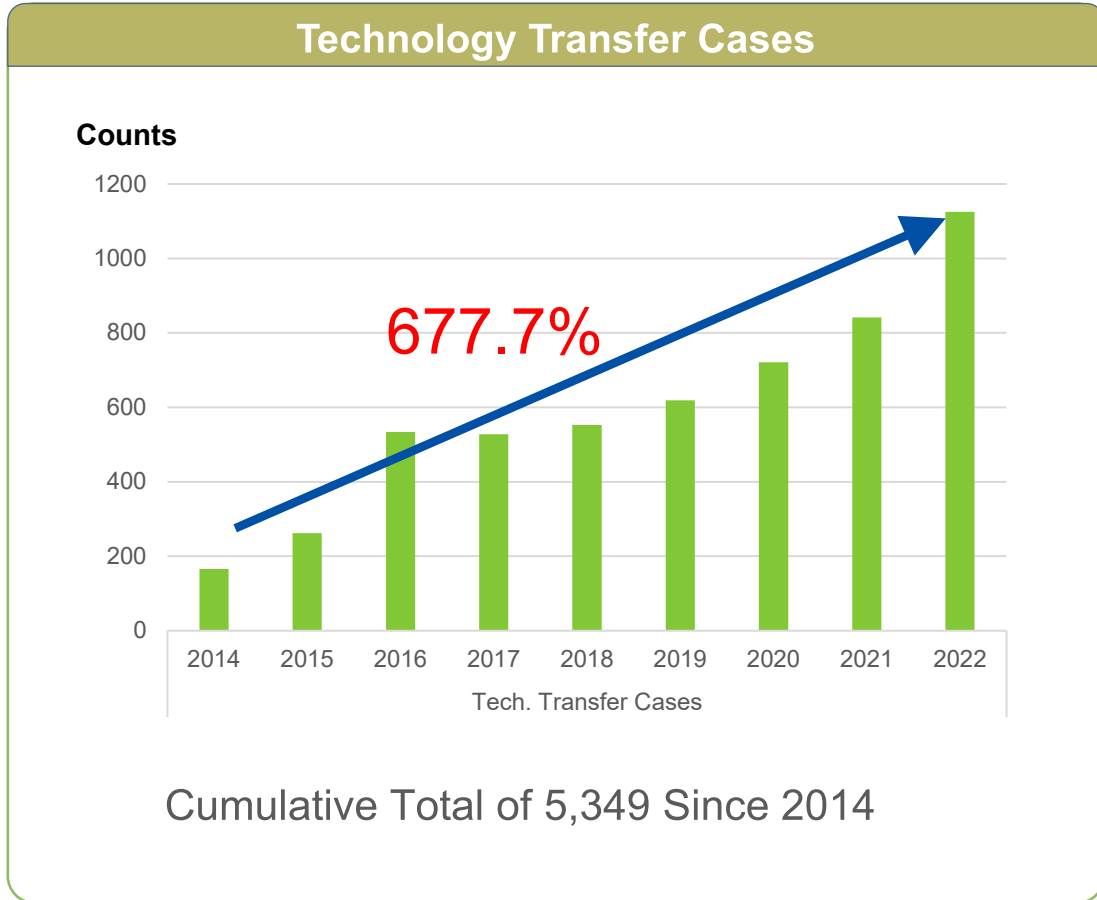


<One-Stop Tech. Transfer Financing>



[Step1]Tech. Transfer > [Step2] Additional R&D > [Step3] Commercialization

# 03 Performance of Technology Transfer



**KOTEC**



**Thank you for your listening**



# 03 Description of Key Variables

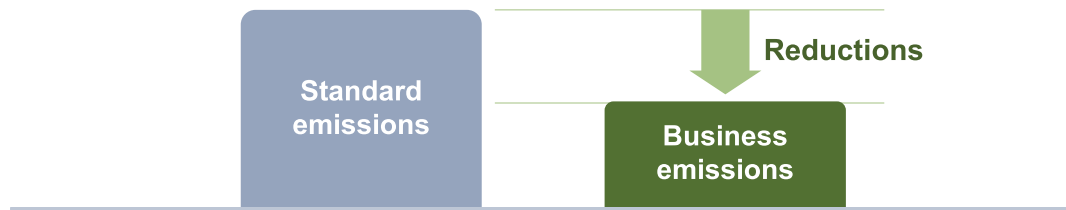
## Period for greenhouse gas reduction

Period during which greenhouse gas reduction occurs due to the technology business to be evaluated

## Estimated reduction

The amount of greenhouse gas reduction estimated to be caused by technology business

- ✓ Baseline Scenario (Principle)  
 :: Estimated reductions = Standard emissions  
 - Business emissions



## Standard emissions

- ✓ Emissions from the most probable situation if technology is not commercialized

## Business emissions

- ✓ Emissions from technology commercialization

## Carbon emission allowance price

Apply the weighted average value of the actual traded emission permit prices (based on the closing price) for the past one year as of the evaluation date

## Discount rate

Quantification of potential risks is used when converting the present value of the estimated reduction