



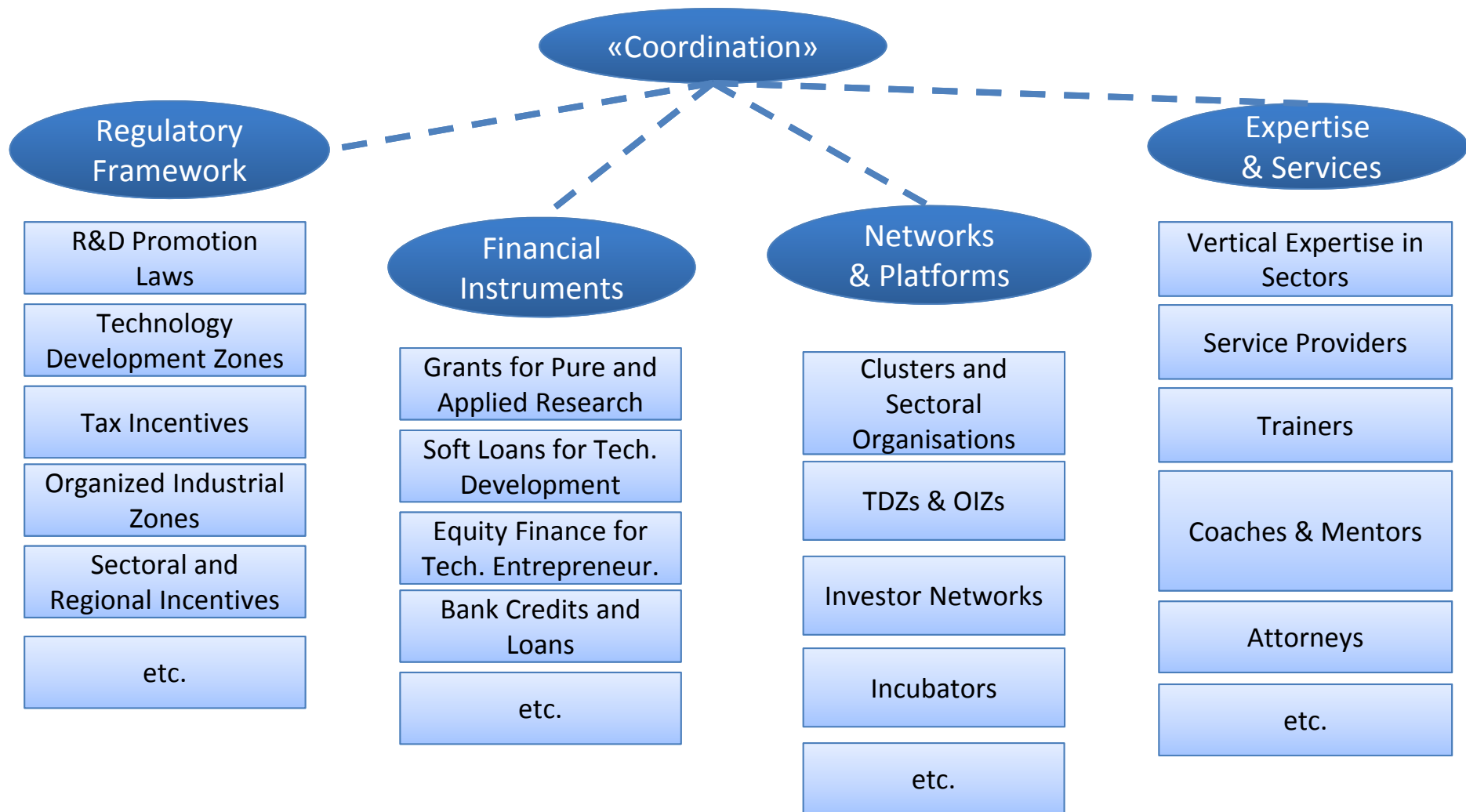
STRENGTHENING NATIONAL SYSTEMS OF INNOVATION: THE IMPORTANCE OF NATIONAL COLLABORATION, INCUBATORS, ENTREPRENEURSHIP AND NICHE MANAGEMENT

UNFCCC Workshop on National Systems of Innovation and Climate Technology

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Pillars of a National Innovation System



Research-to-Market Value Chain



Basic Research Intellectual Property Technology Transfer Technology Development Product Commercial.

Regulatory Framework

Financial Instruments

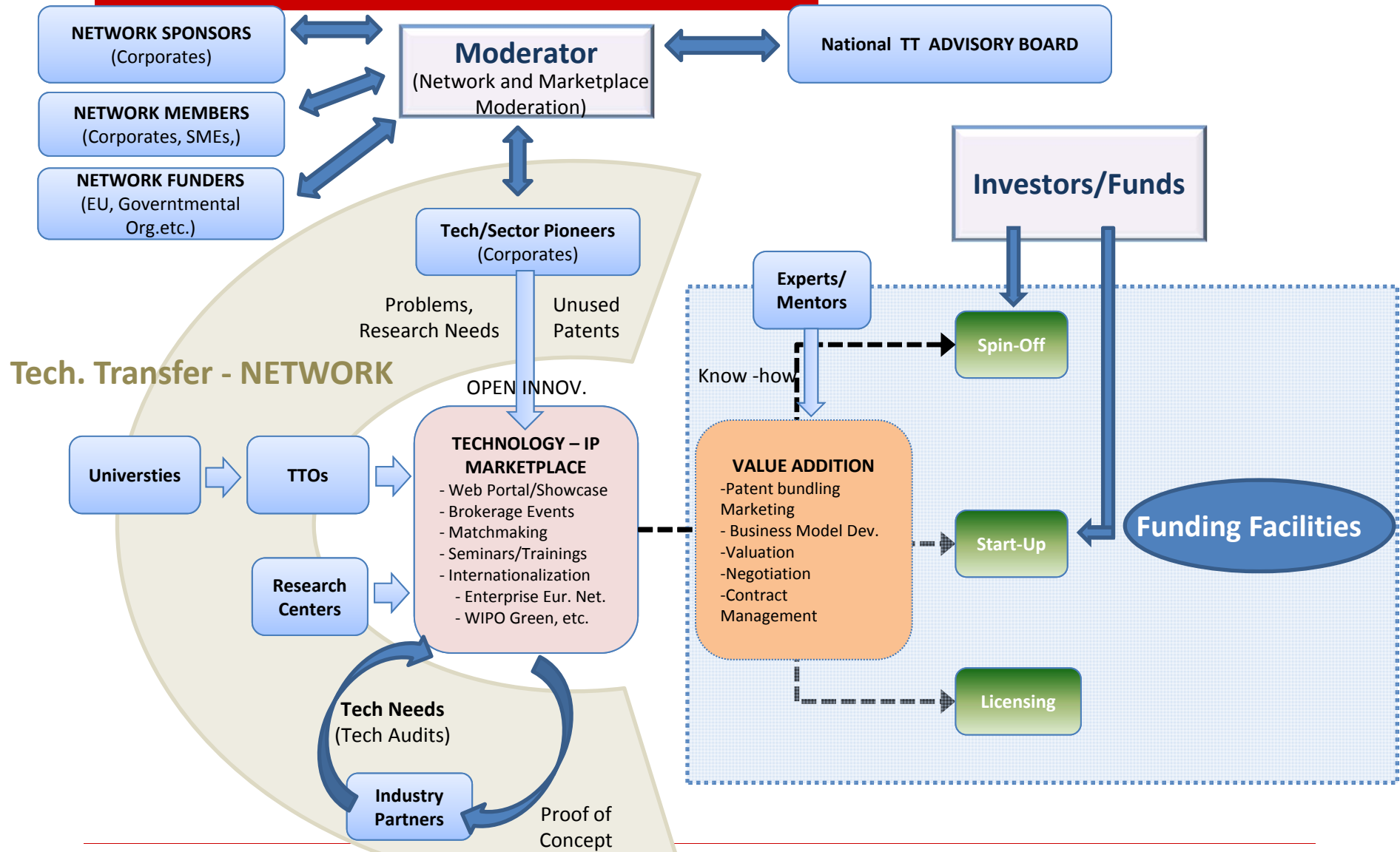
Networks & Platforms

Expertise & Services

			e.g. Tech. Dev. Zones	e.g. Feed-in Tariffs
e.g. Government Grants		e.g. TT Accelerator Fund		
	e.g. Example IP Marketplaces	e.g. TTO Networks		
			e.g. Mentors/Coaches	

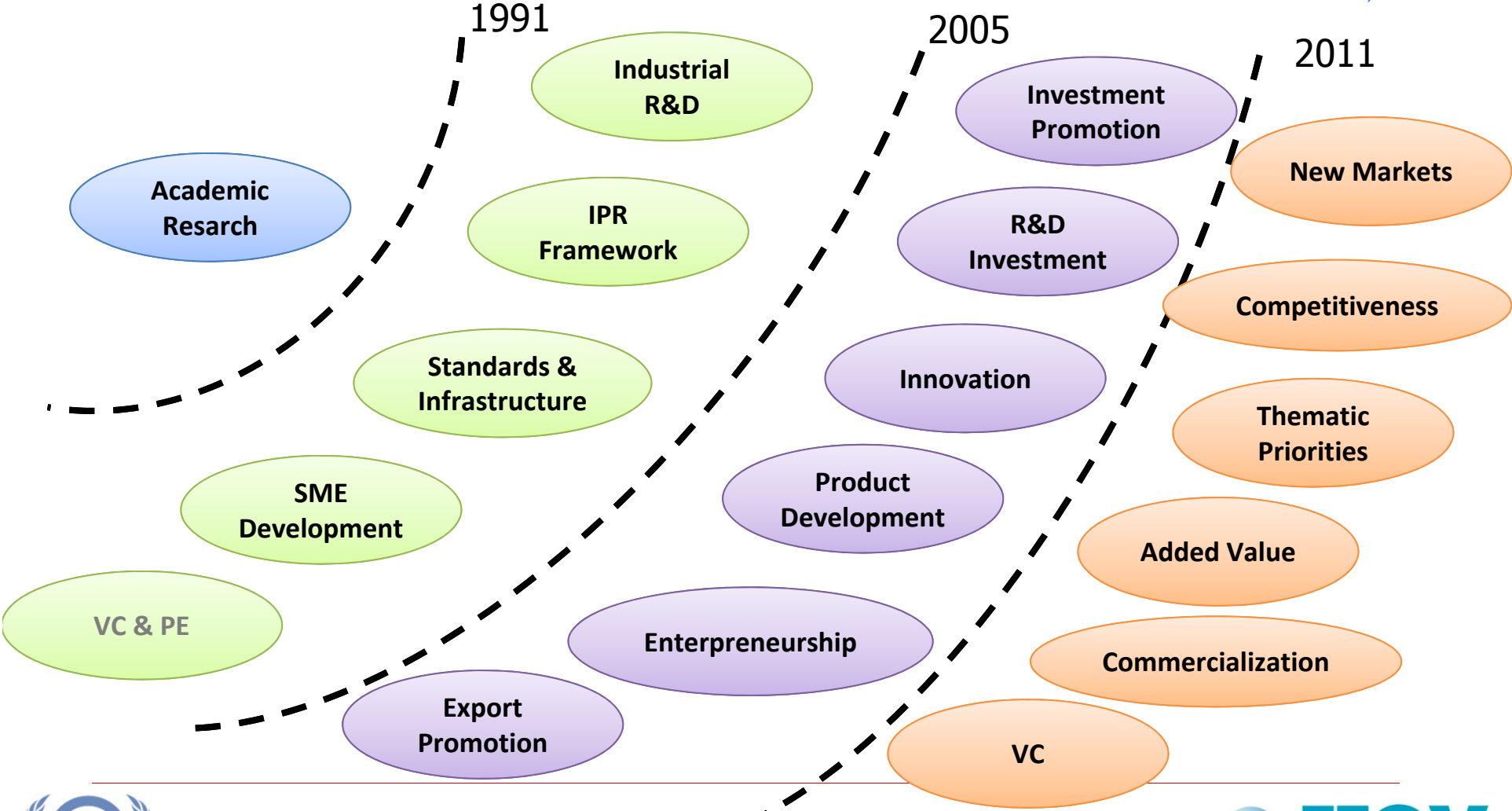


National Tech. Trans. Network (example)



Evolution of the Policy Space (Turkey Case)

More emphasis towards «semantics» within policy and program space



A PPP Model for Supporting RTDI: TTGV

- ❑ Technology Development Foundation of Turkey (TTGV) was founded in 1991 as an example of **public-private partnership (PPP)**.
- ❑ It is “**not for profit**” – It is a “Foundation”.
- ❑ Its mission is to support technological innovation towards increasing the competitiveness of Turkish industry in global markets



Collaboration of Different Parties

□ Founders Assembly

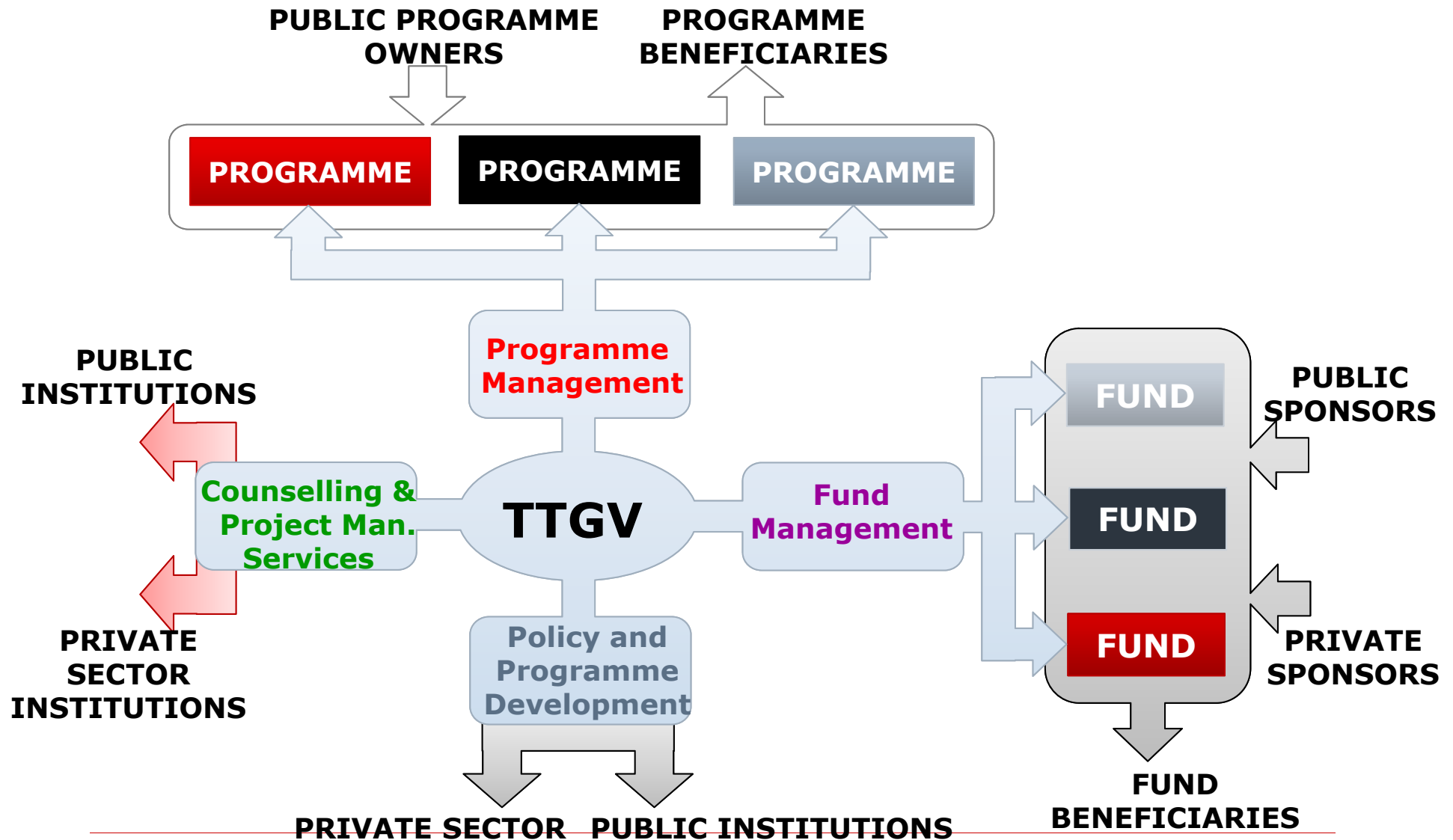
- 26 private sector, 6 public sector, 10 umbrella organisations
- 14 individuals

□ Board of Directors

- 10 members from private sector (including the chairman)
- 5 members from public sector
 - Ministry of Development
 - Ministry of Economy
 - Undersecretariat of Treasury (Hazine)
 - Scientific and Technological Research Council of Turkey (TÜBİTAK)
 - Small and Medium Sized Industry Development Organisation (KOSGEB)



TTGV and its 4 Axes of Capability

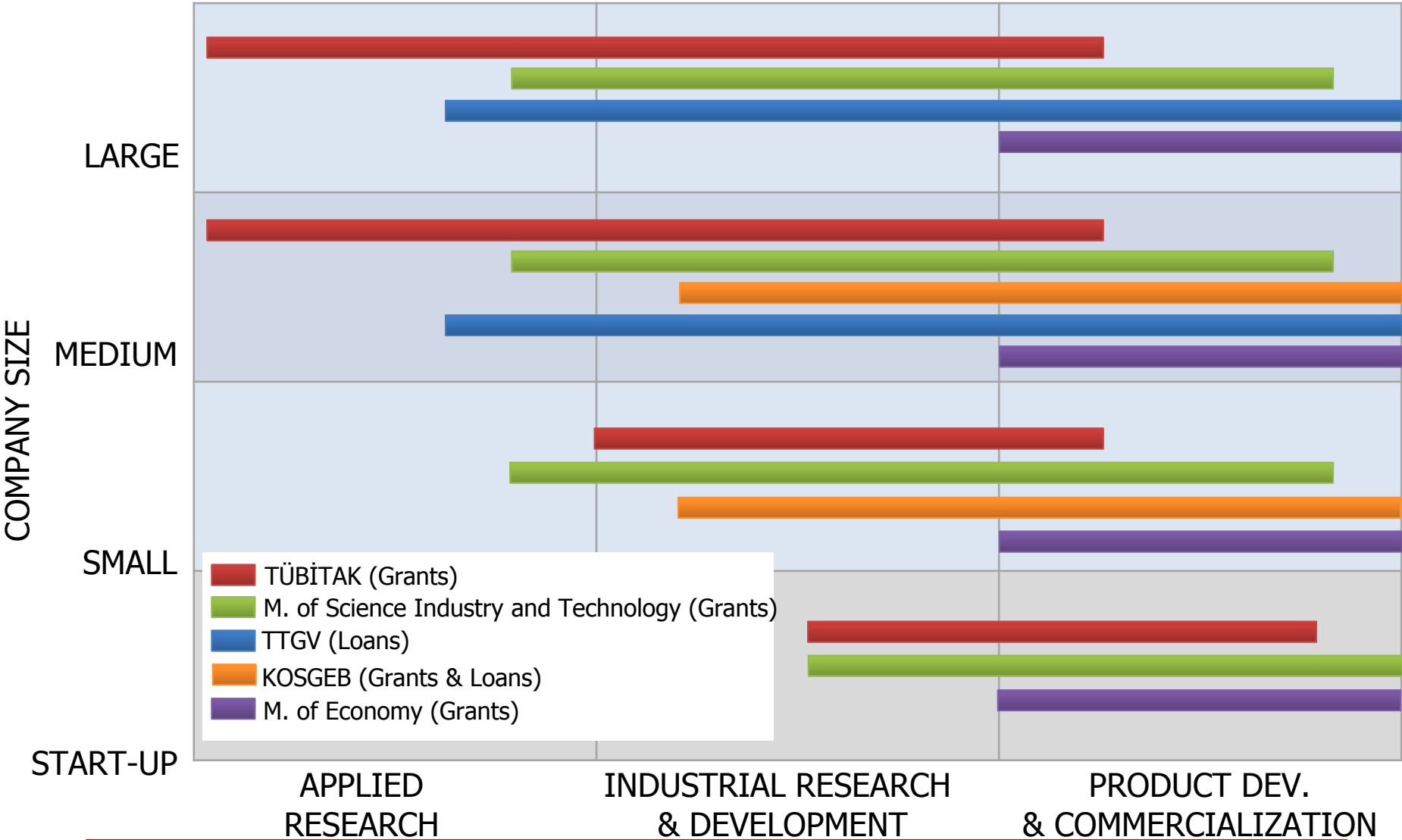


Track Record of TTGV

- ✓ Through its soft loan program, TTGV provided well above 385 Million USD to around 1000 technology development projects
- ✓ TTGV was the first institutional investor in the PE/VC market in 2001
- ✓ TTGV has been the part of many firsts in Turkey:
 - invested in first two PE funds
 - financed first technopark development projects
 - invested in first technology start-up investment company
 - invested in first Turkey dedicated fund of funds (iVCi)
- ✓ TTGV designed and piloted first national commercialization program for SMEs, the design was later picked up by government agencies



National RTDI Programs and TTGV



Advanced Tech. Projects Supports

General Information

- ✓ Provided as soft loan.
- ✓ It aims at providing incentives in the technological fields that has high priorities and also meets market failures within the country.
- ✓ Main objective is to improve technological capability and competitiveness of national industry at selected technology areas
- ✓ Demand-led and flexible support mechanisms.



Advanced Tech. Projects Supports

Selected Technology Areas:

- ✓ High value-added bio-product manufacturing from agricultural wastes
- ✓ Advanced materials technologies and precision-manufacturing techniques
- ✓ Renewable energy production, storage and transmission technologies
- ✓ Food technologies
- ✓ Biomedical technologies, and
- ✓ Technologies for Adaptation to Climate Change



Advanced Tech. Projects Supports

Program Features:

- ✓ Provided as soft loan
- ✓ **Project Duration:** max. 3 years (min. 1,5 year)
- ✓ **Support Amount:** max. 3 million \$ (min. 1 million \$)
- ✓ **Support Ratio:** 50% of project budget
- ✓ **Re-payment:** 1 year grace period, 4 years in total with no interest
- ✓ **Service Fee:** no more than 2,5% of project budget
- ✓ **Source of Support:** TTGV funds



TTGV Environmental Projects Supports

Support Mechanism:

- ✓ Provided as soft loan
- ✓ **Topics:** **Energy Efficiency** and Eco-Efficiency
- ✓ **Project Duration:** max. 1,5 years
- ✓ **Support Amount:** max. 1 million \$
- ✓ **Support Ratio:** 50% of project budget
- ✓ **Re-payment:** 1 year grace period, 4 years in total with no interest
- ✓ **Service Fee:** 6% of support budget
- ✓ **Source of Support:** TTGV funds



TTGV Environmental Projects Supports

	Supported Projects	TTGV Support (\$)	Sectors
Environmental Technologies	10	7.031.119	Cement Food & Beverages Building materials Textile Recycle-Recovery (waste tires)
Energy Efficiency	14	5.399.318	Lime Food & Beverages Energy Paper and paper products Textile Basic metals (steel) Ceramic
Renewable Energy	2	1.500.000	Hydroelectric power plants
Total	26	13.960.437	



TTGV Environmental Supports

Success stories composed of 15 projects;

- ✓ **Total amount of investment:** 15 Million Dollars
- ✓ **Total TTGV support amount:** 6 Million Dollars
- ✓ 9 projects focusing on the improvements and developments in an established facility; **5 project** focusing on new products / new facilities; **2 projects** on new initiatives



TTGV Environmental Supports

Success stories composed of 15 projects;

Parameter	Saving / minimization amount
Natural gas consumption	6,85 million m ³ /year
Electricity consumption	2,25 million kWh/year
CO ₂ emission	54.750 tons/year
Reduced waste to be disposed	62.000 tons/year
Ratio of local technology and equipments	70%
New employment	35 employees
New qualified employment	8 employees



TTGV and Green Entrepreneurship

Horizontal Expertise of TTGV

- *Innovation*
- *Research and Development*
- ***Entrepreneurship***
- *Competitiveness*
- *Technology development*
- *Etc.*

Vertical Expertise of TTGV

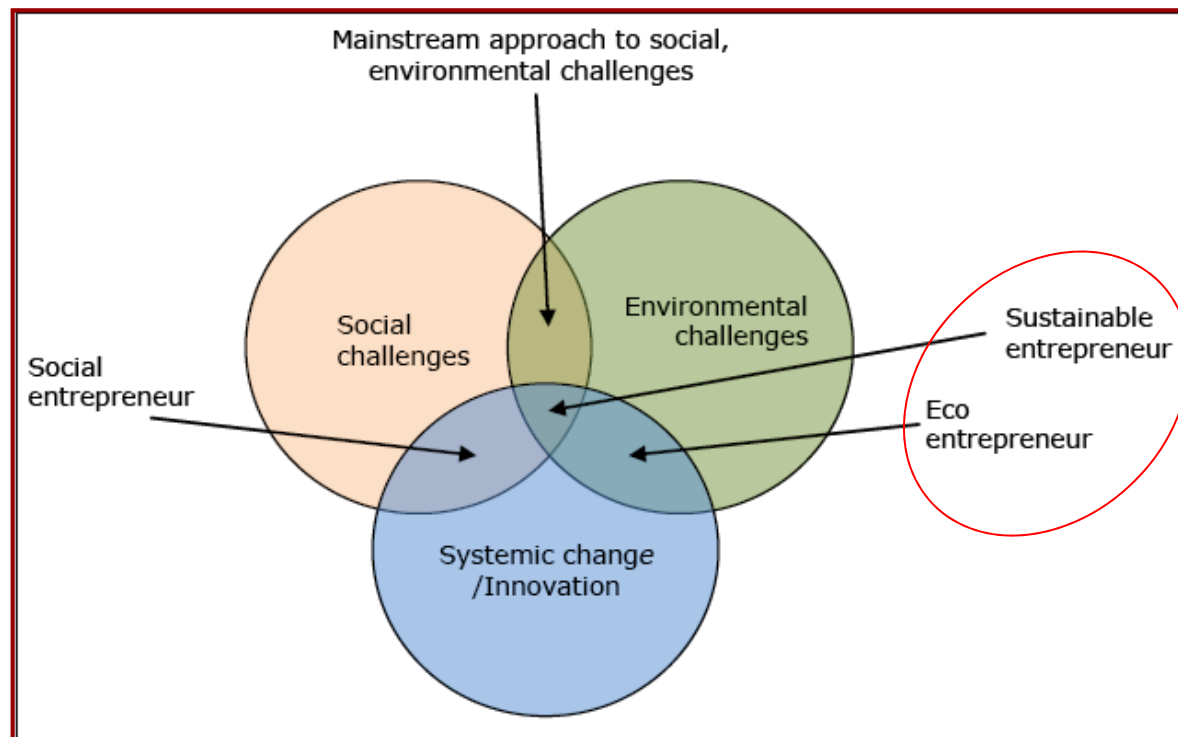
- *Eco-innovation*
- *Cleaner Production*
- *Sustainability*
- *Eco-efficiency*
- *Environmental technologies*
- *Etc.*

GREEN ENTREPRENEURSHIP



Green Entrepreneurship

- Combination of **sustainable entrepreneurship** and **eco-entrepreneurship**.
- The focus is on the **environmental benefits** particularly those which have a direct contribution to **sustainable innovation**.



Green Entrepreneurship Motives

GENERAL

- *Self realization and independency*
- *Enhanced status and income*
- *Economic contribution and impact*
- *Upholding tradion and securing income*

TURKEY

- *Security for themselves and families*
- *To make a direct contribution to the success of a company*
- *Increase in income*
- *Flexibility, freedom, etc.*

+

- *Passion and believe in green values*
- *Identifying a gap in the market and finding an environmental solution*

✓ **An awareness and perception about environmental problems**

✓ **Technical and legislative knowledge**

required!



Green Entrepreneurship in Turkey

- Environmental and energy related legislation (international agreements and national legislation)
 - Waste management regulations (specific wastes: end of life tyres, etc.)
 - EU harmonization process (eco-label, WEEE, etc.)
 - Energy efficiency/ Renewable energy laws and regulations
 - Eco-design of energy related products
 - Energy labelling of household appliances
- Strategy documents and action plans
 - Industrial Strategy and Action Plan (eco-design, eco-labelling, WEEE, Oeko-tex 100 standard, etc.)
- Financial supports and incentives (R&D, investment, renewables, etc.)
- National capacity

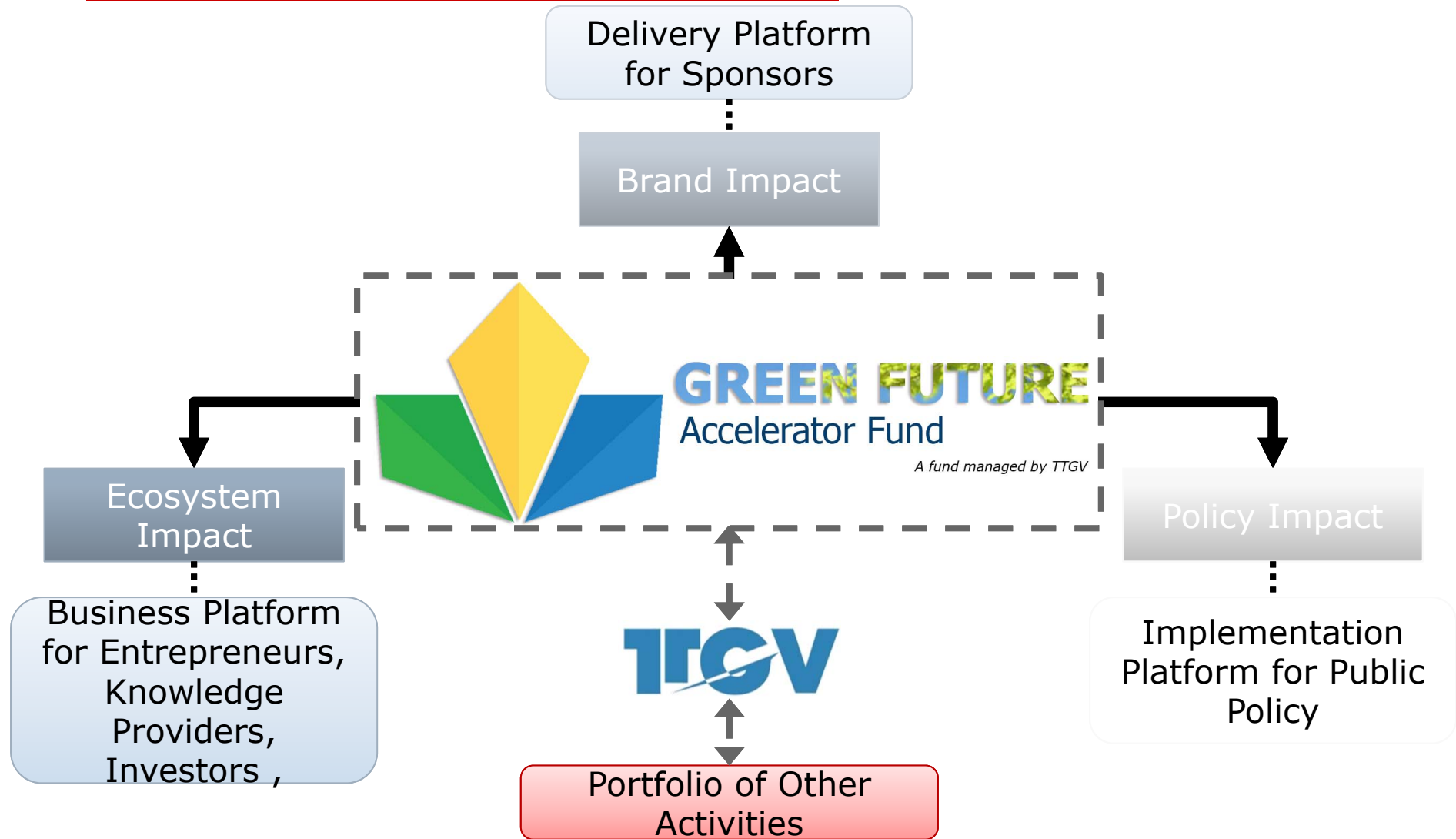


Green Future Accelerator Fund

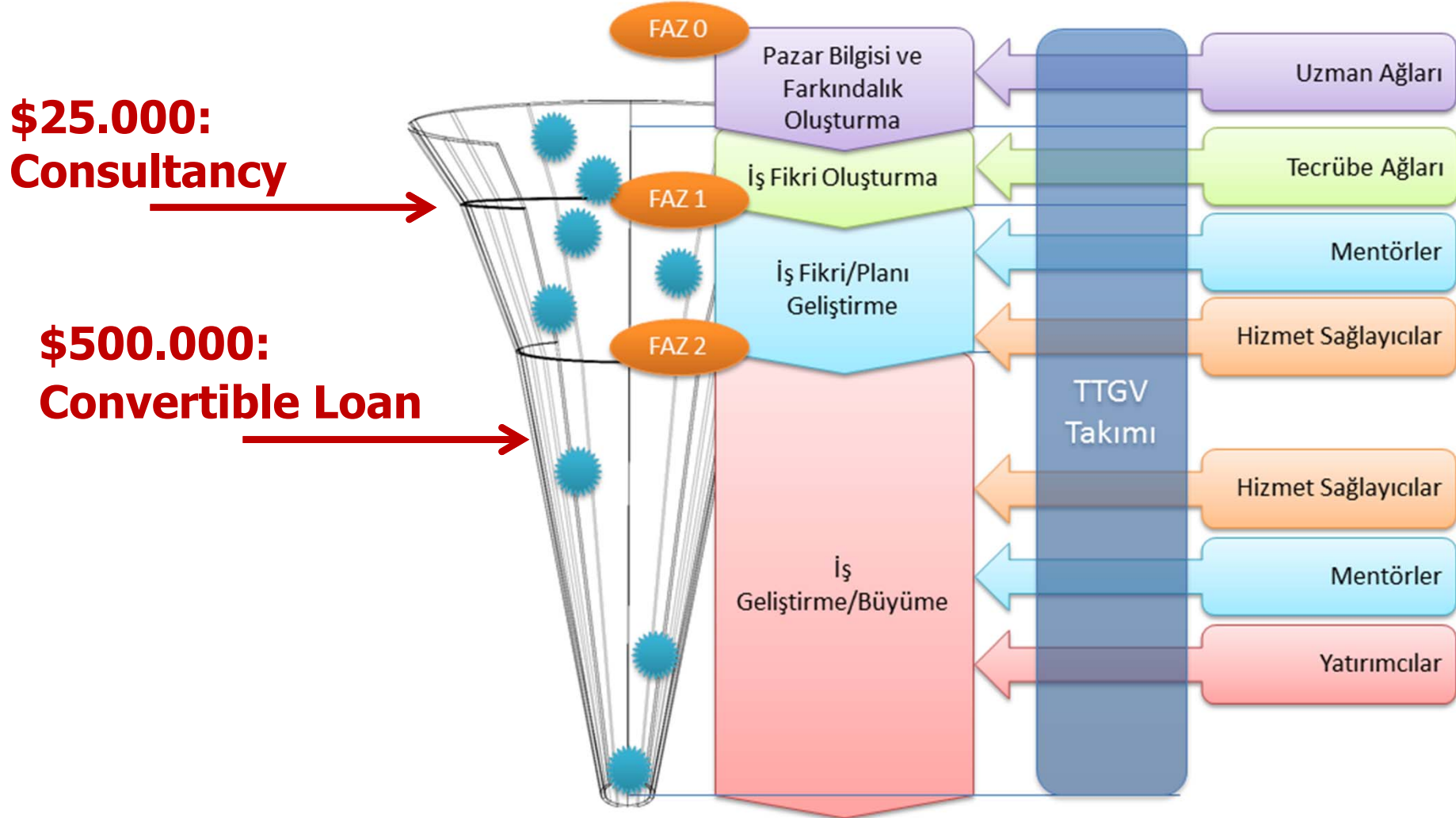
- ❑ Fund Size: **10 M \$**
- ❑ The aim is to develop and apply an innovative support mechanism to **accelerate the transfer of R&D outcomes**, in the field of **environmentally friendly practices**, to the market and to support the relevant **entrepreneurship activities**.
- ❑ Possible project topics include;
 - Energy efficiency
 - Smart energy distribution
 - Energy storage
 - Sustainable transportation
 - Air and environmental quality
 - Advanced material and production
 - Recycle, recovery, waste management
 - Bio-materials and bio-fuels
 - Alternative technologies that do not damage the ozone layer
 - Other



Multiple Impact Points



Fund Investment Process



Thank You...

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