



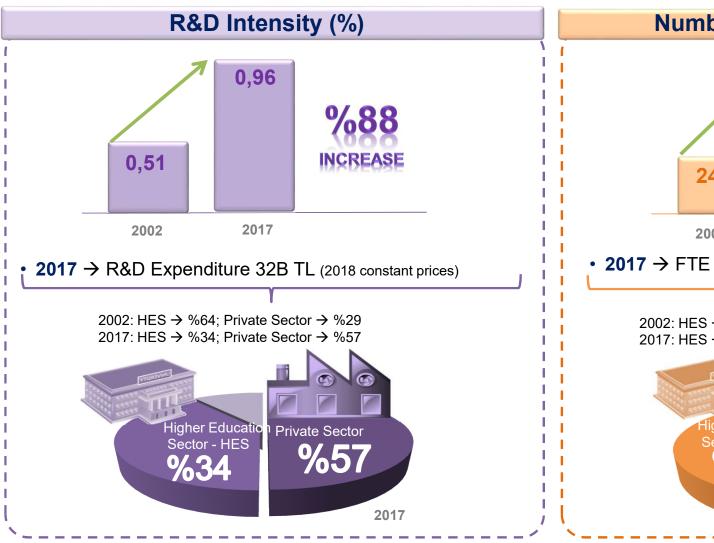
SANAYİ VE TEKNOLOJİ BAKANLIĞI TÜBİTAK

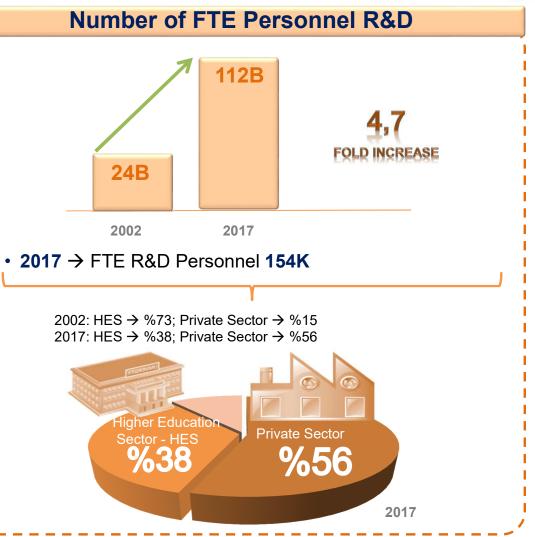
# Recent Developments in Integration of TARAL to ERA

Prof. Dr. Hasan MANDAL TÜBİTAK President (The Scientific and Technological Research Council of Turkey)

April 25, 2019

### Significant Increase in R&D Indicators

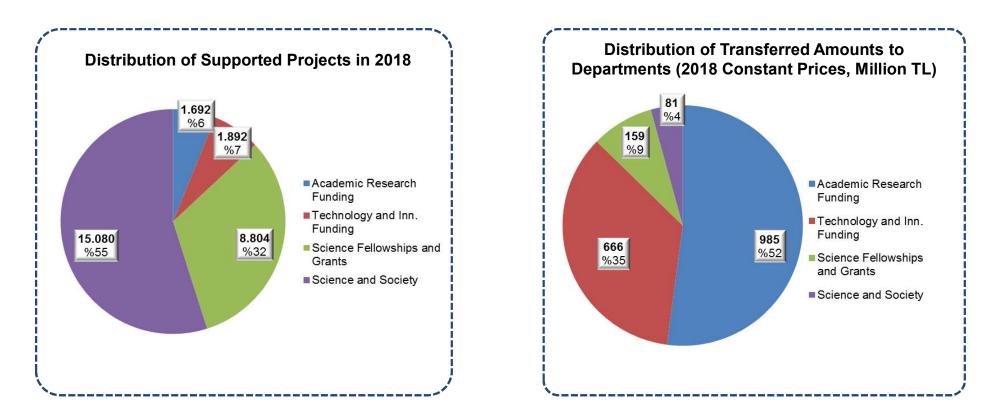




Kaynak: TÜİK (2018)

# **TÜBİTAK STI Funding**

In 2018, 27,468 projects/experts received funding and 1.9 Billion TL transferred.

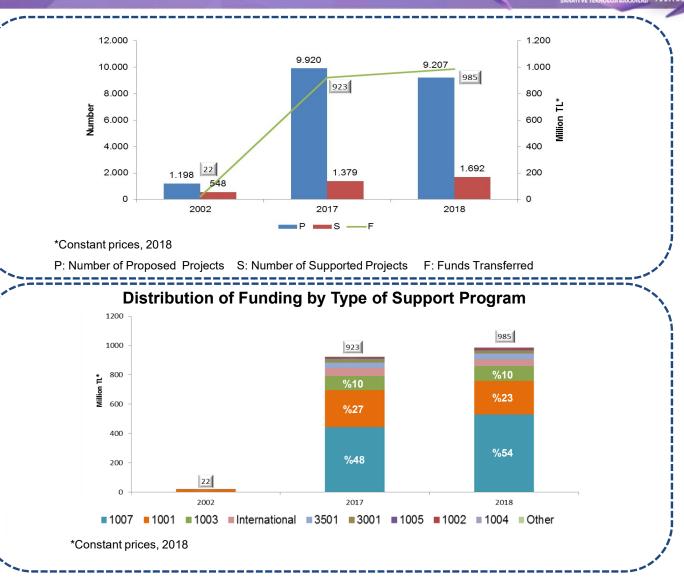


While the amount transferred in 2002 was 154 million TL, it increased **12 times** in 2018 and reached to **1.9 billion TL**.

# TÜBİTAK Academic R&D Funding

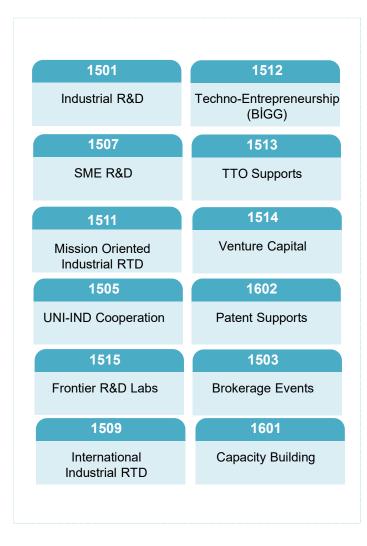
Support for academic R&D, capacity building, specialisation and public needs via 9 support programs

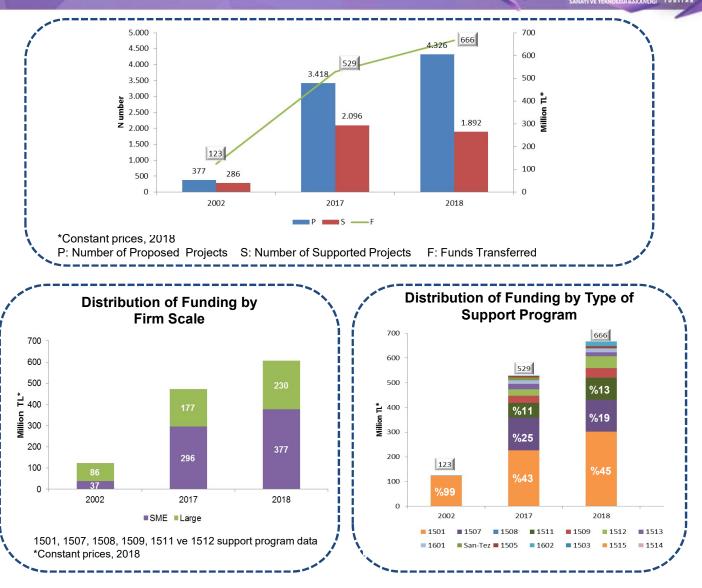




Note: Programs coded 1010, 1011 and 1301 had been repealed in 2013, 2014 and 2018 respectively, with the decree of TUBITAK's Former Science Council.

# **TÜBİTAK Industrial R&D Funding**





# **New Strategic Approach of TUBITAK**

Focusing on R&D and Innovation Outcomes & Impacts

- National Target Oriented Outcomes
- Transformation of Outcomes to Social and Economic Benefits



### **Qualified** Knowledge and **Qualified** Human Resources

# **Pillars of the Turkish Vision for STI**





Enhancing Skilled HR

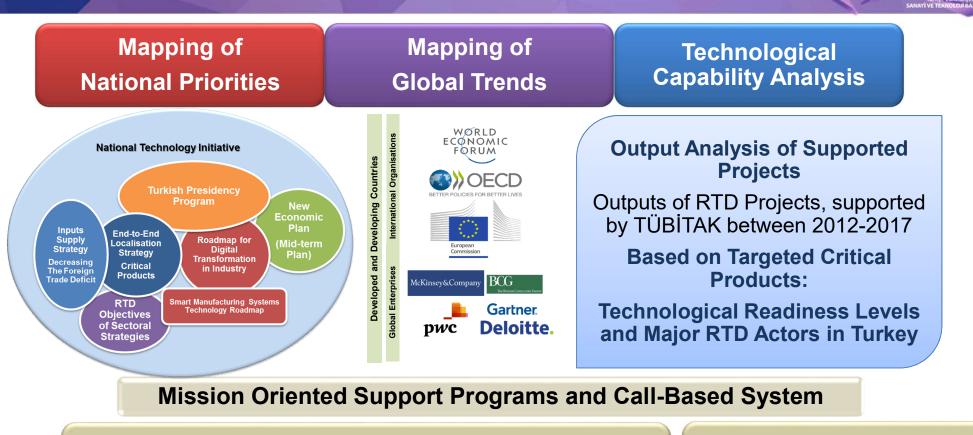


Technology Based Start-ups & Innovation Interfaces



Focused International Cooperation

### **Mission Oriented Approaches**



Research, Technology Development and Innovation Projects RTD Based on Public Needs (1007)



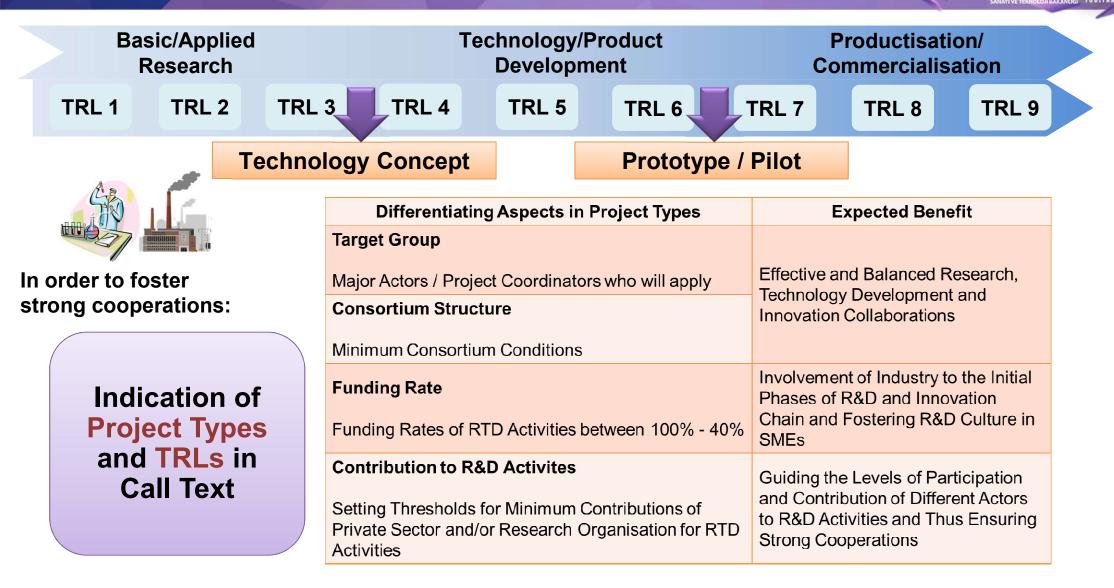


Embedded Systems



National ommunication Satellite

### **Different Project Types/Funding Schemes Based on TRLs**



Complies of National Call Programme with Horizon 2020 Calls Content and Methodology



- Mission and Outcome Oriented Call Systems
- Different Type of Projects with Various Technology Readiness Level
- Call Topics Matching with Horizon 2020 (EU Foresight Documents, Horizon 2020 Work Programmes)

Call Programme matches 89 % with Horizon2020 Programme

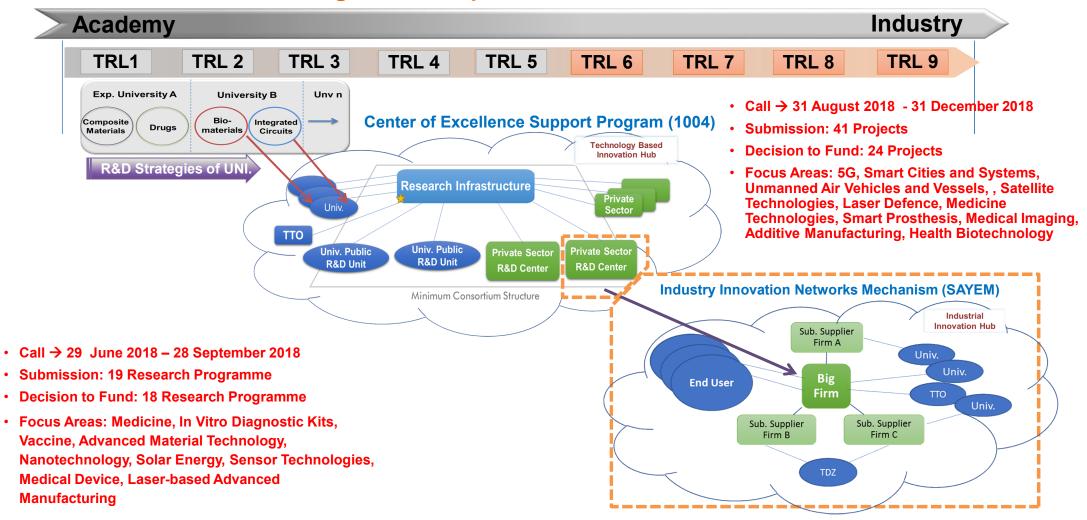


National Consortium and Capacity Building for H2020 Calls

### **Enhancing Output Oriented Interactions in Value Chains**

**Both Programs are Opened to International Partners** 

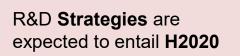
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# National STI Impetus towards H2020

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- Universities (Research Universities)
- Research Infrastructures
   (Public and Private R&D Centers)

R&D **Activities** are expected to entail **H2020** 

- Technology Based Innovation Hubs
- Industrial Innovation Hubs

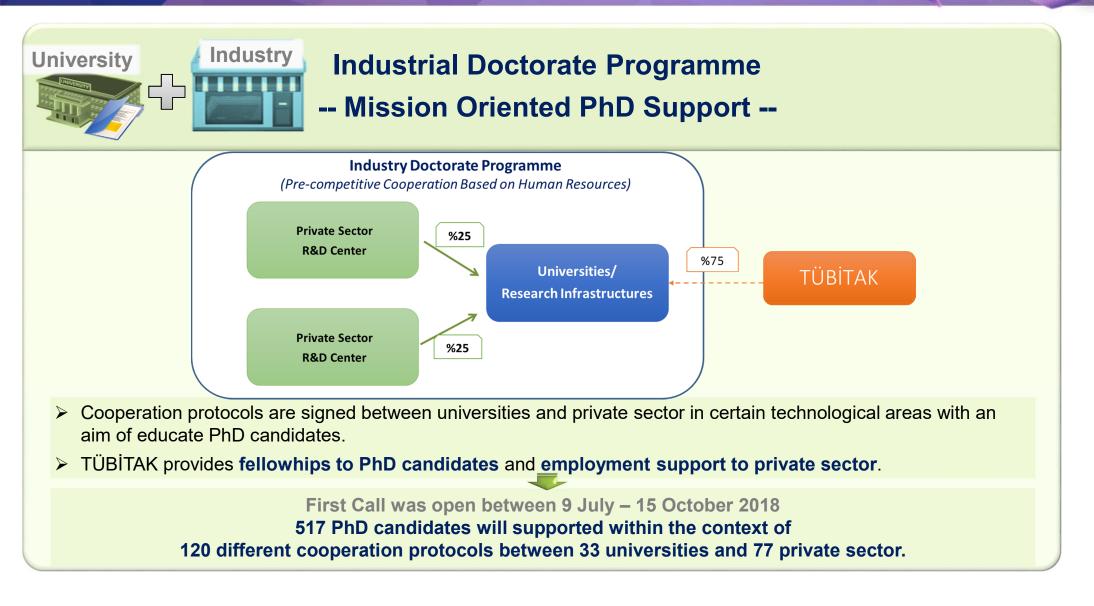
# Performance indicators include H2020

- Universities (Research Universities)
- Research Infrastructures
- Public and Private R&D Centers
- TTOs

12/32

6

### **Enhancing Qualified Human Resources: Recent Initiative**



# 2232 - International Fellowship for Outstanding Researchers



Announced, applications started to be received from December 15, 2018. The call is open till March 29, 2019

#### **Young Researchers**

Researchers at the beginning of their careers who have obtained a **doctoral degree within the last 4 years.** 

OR

#### At least 4 years of full-time research experience abroad after obtaining bachelor's degree (a maximum of 2 years of master degree, a maximum 3 years of doctoral degree with thesis completed abroad will be taken under consideration in this context)

#### **Experienced Researchers**

Researchers who have worked abroad **4 years or more at least as an Assistant Professor** or researchers who have worked abroad **minimum 4 years as a team leader** or researchers who have carried out **an independent academic research minimum 4 years**.

OR

At least 6 years full time research experience as a team leader abroad obtaining bachelor's degree (a maximum of 2 years of master degree, a maximum 3 years of doctoral degree with thesis completed abroad will be taken under consideration in this context)

#### Support Items

Scholarship for Project Leader (monthly)	Scholarship for Establishing Research Team (for expenses related up to 5 PhD student scholarship)
Initial Research Grant	
Research Grant	Overhead for Host Institution(monthly)
Family Allowance for the Project Leader (monthly)	Project incentive bonus for Researchers
Travel allowance for the project leader and his/her family	Health insurance for the project leader and his/her family

#### **Qualifications for Researchers**

- Placed in the "Highly Cited Researchers" published by Thomson Reuters
- or
  - His/Her previous institution abroad:
    - must be placed among the top 100 universities in the field-based rankings according to the QS (Quacquarelli Symonds) World University Ranking or THE (Times Higher Education) Rankings or
    - must be placed in the "Top 2500 Companies" according to the "Industrial R&D Investment Scoreboard" published by the European Commission Joint Research Center
    - must be placed among the "**Top 250 Institutions**" according to the "**Scimago Institutions Ranking Government**"

### **Support Program for Frontier Researchers**

Scientific and Technological Projects which have the following characteristics will be supported:

- Having ambitious objectives towards breakthrough advancements
- Providing solutions for significant gaps or
   bottlenecks and paving the way for scientists to acquire new perspectives
- Having the potential to result in a significant discovery and/or invention

1. European Research Council - ERC Project Enhancement Support

**Frontier Researchers** 

### 2. National Support for Frontier Researchers

**Purpose of the Support:** To improve/enhance the ERC application; increasing the return of EU funds to Turkey

Target Group: Researchers who have applied to ERC but not funded in the last 3 years and have the score for the second phase:

"A" Max. 1 Mllion TL / 2 years
"B" Max. 0,5 Million TL / 2 years

**Application Requirements:** 

- Commitment to re-apply to ERC in 2 years
- The researcher **shall already be working or will be working on the starting date of the funding**, in a research organisation based in Turkey.
- After the program funding, if the researcher receives ERC grant, the researcher shall conduct the ERC project in Turkey.

**Additional Condition:** If the project of the researcher receives ERC grant, TUBITAK will terminate the funding starting from the date of ERC funding.



# National STI Impetus towards H2020

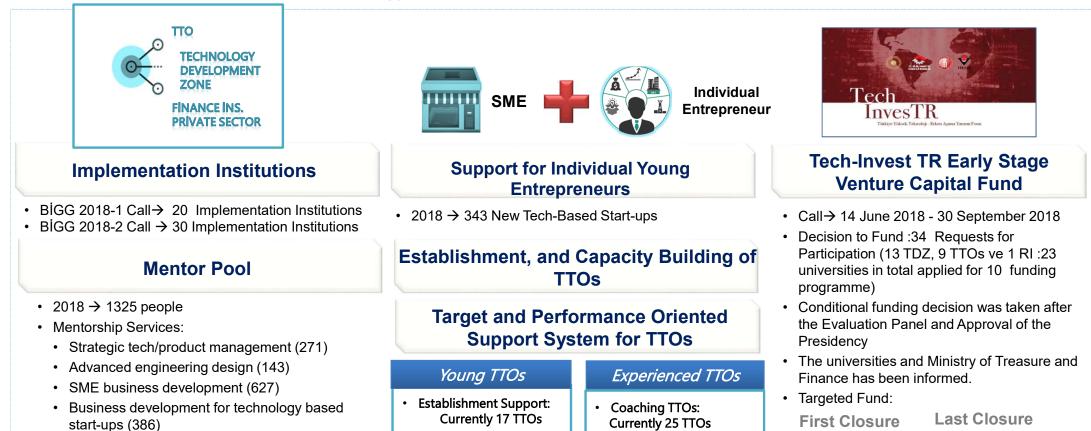


### Key for success in H2020

**2237 Support Program for Frontier Researchers** 



#### **Technology Based Start-ups & Innovation Interfaces**



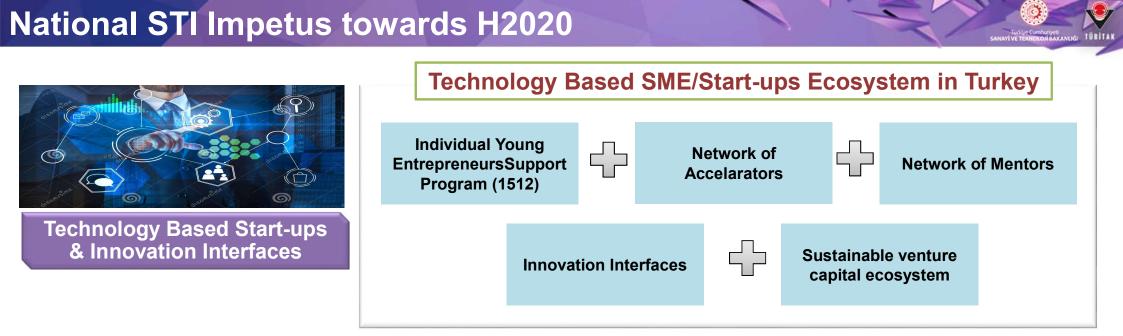
(10 in TDZs)

Million TL

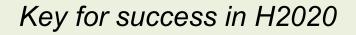
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(4 in TDZs)

• Horizon2020 (19)

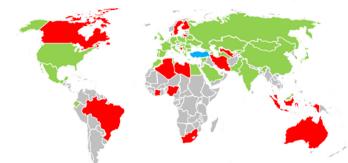


- Increasing the performance of new players in TARAL with a dedicated focus on SMEs
- Improving comprehensively the competitiveness of Turkey's innovation ecosystem by strong interfaces



# **TÜBİTAK International Science and Tehcnology Cooperation (UIDB)**





#### **International Bileteral Cooperations**

- 62 agreements with 50 countries
- 318 ongoing cooperation research & innovation projects\*\*



Copperations with International Organizations to Increase Scientific and Technological Visibility of Turkey

\*Represents Eurostars, COST, EMPIR and PRIMA data as wells the offiially announced Horizon2020 calls for 2018 (~85% of total 2018 calls). \*\* 150 bilateral + 94 COST + 74 ERA-NET

- Batteries are currently seen as important technological enablers to drive the transition towards a de-carbonised society, by integration of renewable and clean energy sources (such as wind energy and photovoltaics) in the electricity grid, and by electrification of transport.\*
- The world production of battery cells is dominated by Asian companies which represent more than 90% of the present world capacity.
- It is indispensable to search for better performance, and strongly force the development of more price competitive and sustainable battery storage solutions.
- As a result, European Commission earmarked EUR 100 million to finance new topics for Work Programme 2019 and 2020 to support the development of the next generation electrochemistry and production technologies for mobility and energy storage applications.\*\*

\*European Battery Cell R&I Workshop 2018

\*\* Cross-cutting activities Work Programme 2018-2020: Building a Low-Carbon, Climate Resilient Future: Next-Generation Batteries

For Turkey, batteries are crucial for electric vehicles and stationary energy storage systems as well.

- The automotive sector has been identified as one of the sectors in which Turkey has strong R&D and innovation capacity through the National Science, Technology and Innovation Strategy (NSTIS).\*
- Renewable energy, power and storage technologies are stated as among the top priority areas in National Energy Research, Development and Innovation Strategy\*\*

Regarding the priorities of the automotive and energy sector, electric vehicle and energy storage systems have been ranked as the most significant areas to support.

**TÜBİTAK has launched mission oriented calls** dedicated to foster electric vehicle and energy storage systems systems and technologies and funded national academy and industry stakeholders through research and innovation projects.

<sup>\*</sup> https://www.tubitak.gov.tr/sites/default/files/ek\_9\_ubtys\_2015\_eylem\_plani.pdf

<sup>\*\*</sup>http://www.tubitak.gov.tr/sites/default/files/ek1\_ulusal\_enerji\_arge\_yenilik\_stratejisi.pdf

Up to now, the following topics related to EVs have been funded under mission oriented calls:

- Energy Management Systems for Electric and Hybrid Vehicles,
- Electric Motor Control Units & Battery Technologies,
- Infrastructure Technologies for Electric Vehicles,
- Battery Structure and Systems for Long Driving Range Electric Vehicles
- Battery and Energy Management Systems for Electric and Hybrid Vehicles
- Technologies for Charging Ecosystem (including on-board/offboard and wireless charging)

- To raise awareness about the EU battery vision, strategies, and upcoming H2020 calls
- To faciliate cooperation between the Turkish stakeholders with European counterparts
- To set up a national battery focus group within Turkish industry&academy

2023'e Doğru TÜBİTAK ile Geleceğe Bakış



# Thank you for attention.