



**TURKEY in
HORIZON 2020**
CENTRAL AND EASTERN EUROPE PROGRAM

TURKEY IN HORIZON 2020
ALTUN/HORIZ/TR2012/0740.14-2/SER/005



This project is co-financed by the
European Union and the Republic of Turkey
Bu proje Avrupa Birliği ve Türkiye Cumhuriyeti tarafından
finanse edilmektedir

H2020 Thematic Oriented Training "Energy Efficiency Calls"

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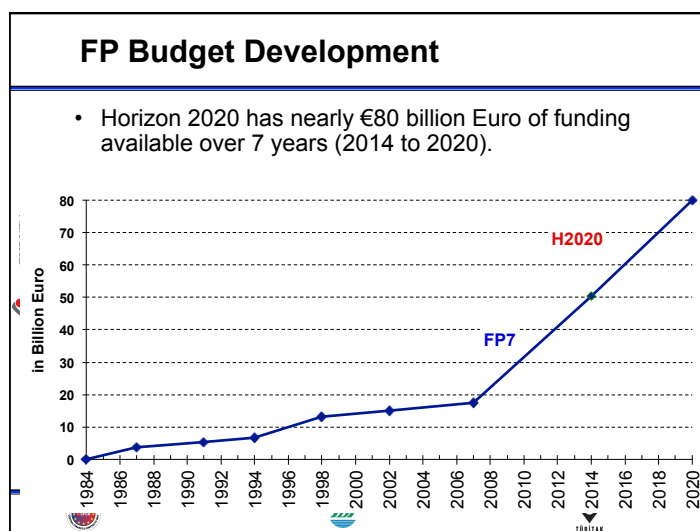




THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION




HORIZON 2020

**The EU Funding Programme for
Research and Innovation**

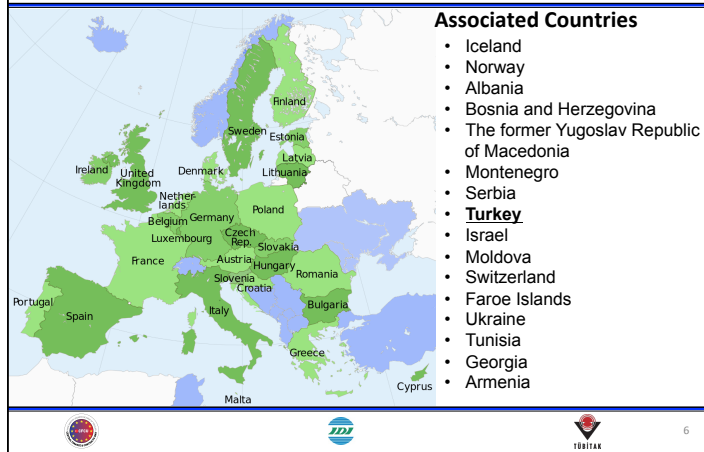


Principles of EU R&D&I Activities

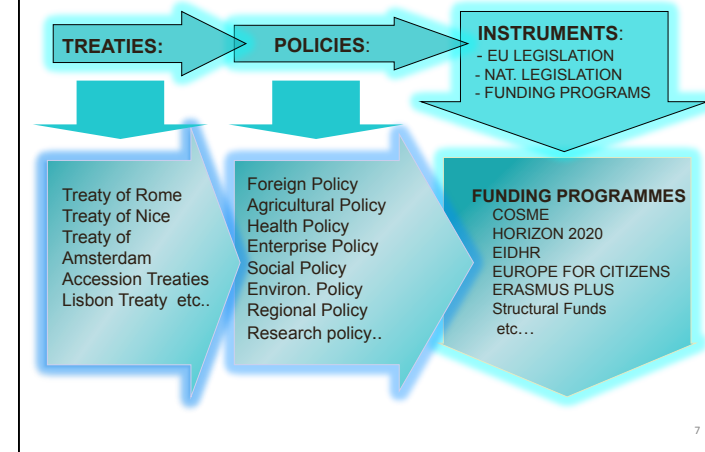
- Transnational collaboration (min. 3 partners/3 countries from MS or AC)
- Open to all: Industry, SMEs, Universities,...)
- Based on strategic objectives - programme oriented
- Consortia are selected by Calls for Proposals
- Innovative, based on science & technology excellence
- Competitive - competition of the best teams in EU
- Project results are the property of the participants

28 Member States and 16 Associated Countries



The logic of EU funding programmes



... before we start

What is a proposal and what is a project ?

Assume that a number of organisations want to work together to achieve a certain goal.


- They write a **Proposal**: a document that describes in detail what they want to do, how and why.
- It covers the scientific/technical aspects, a concrete management/work plan and describes how the results will be used after the end of the project (exploitation) and what the long-term impacts are.




A proposal is not legally binding !

... before we start


If this proposal is accepted, then it becomes a Project.

- The **Project** consists of the same consortium as the proposal, to achieve a given goal, funded by the EC.
- The proposal text becomes the "Description of Work", the **DoW**.
- This **DoW** becomes part of the contract with the EC and **is legally binding**.

 An example ...




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ICT : Advanced Cloud Infrastructures and Services






SecUre iNformation SHaring in federated heterogeneous private clouds


Funding: 4.520 mill Euro. Start 1/2015, 3 years




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 Today the European Public Sector Players lack the necessary infrastructure and technology to allow them to integrate their computing clouds. Furthermore, legislative barriers often make it difficult to use available commercial technological solutions. The SUNFISH project aims to provide a specific and new solution to face these issues. SUNFISH will enable the secure federation of private clouds based on the Public Sector needs: federated private clouds belonging to different Public Sector Entities will be able to share data and services transparently, while maintaining required security levels.

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Partners

 4 Public Bodies
3 Academic Partners
2 Industrial Partners
1 Public-funded non-profit association
1 SME

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What is HORIZON 2020

Horizon 2020 focuses on Research and Innovation.

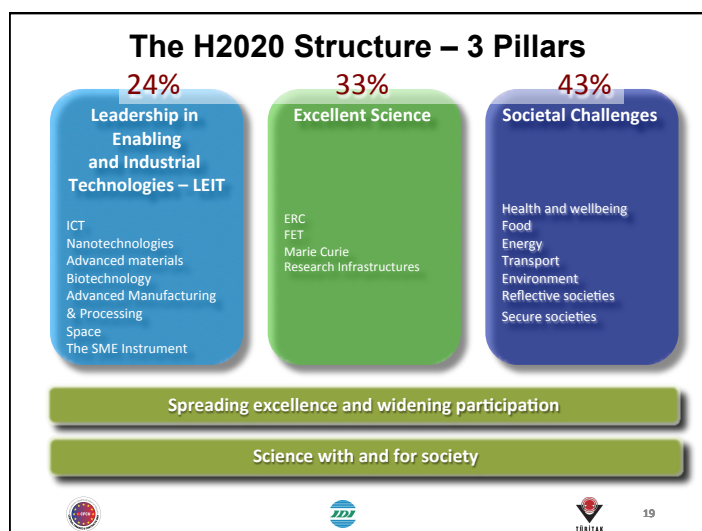
It does not cover, for example, Education or Arts.

It addresses 3 main areas ("Pillars"):

- Technologies to strengthen Industrial Leadership.
- Excellent Science to make European research and innovation system more competitive.
- Societal Challenges, responding to the priorities of the EU2020 Strategy.



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Remember: H2020 is called

Framework Programme
for
Research and Innovation



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What is Innovation ?

What is INNOVATION and why is it so important?

- New ideas ?
- New knowledge ?
- New research results ?
- New methodologies ?

Of course, but ...



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What is Innovation ?

- Innovation = Invention (research) + **exploitation**
- A new way of doing things, which is commercialized.
- Schumpeter said “an idea that finds its way to the market”

Innovation relates to **Products, Processes, or Business Models**



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INNOVATION

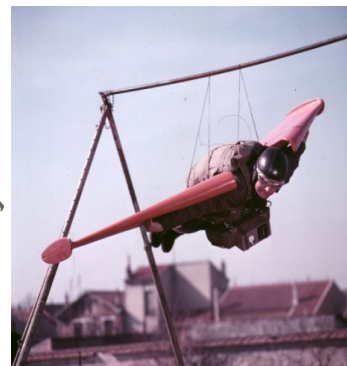
- Innovation is **not improvement**, it is doing something **different**
- Innovation results in a **significant impact**
- Innovation is **invention applied**
- Innovation can be **disruptive**

Let's look at some examples ...



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INNOVATION



Is this idea from 1956 Innovation?

No!
It never went past this first stage.



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INNOVATION



1979

Was this SONY walkman an Innovation?

Yes!

A completely new concept that was highly successful on all markets!

Was it a Disruptive Innovation?

No!

There was nothing comparable to it before.



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INNOVATION



Are MP3 players an Innovation?

Yes!

A new concept (small, light, no moving parts) that is highly successful on all markets!

Was it a Disruptive Innovation?

YES!

It killed the tape-based walkman!



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INNOVATION

What is next?



Streaming to mobile devices!

Disruptive?

At least a serious threat to MP3 players but also to CDs.

While many of the past Innovations have disappeared or will in the future, some core Innovations remain as essential ones:

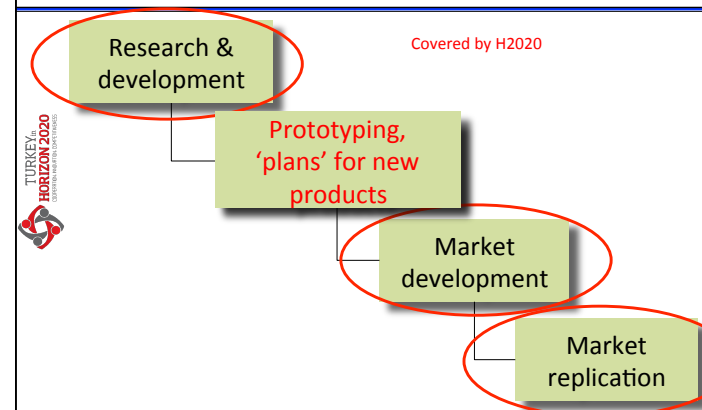
For example, the MP3 encoding.

Developed and patented by Fraunhofer Institute, Germany, in 1993



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The Innovation Chain



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Research and Innovation

Calls in **Industrial Technologies** and **Societal Challenges** either address

- Research and Innovation (RIA),
- Innovation (IA), or
- Coordination and Support (CSA)



For Innovation calls, the research part has been done previously and some prototype of a certain maturity must exist.

How can we measure such maturity?



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Measuring Technology Maturity

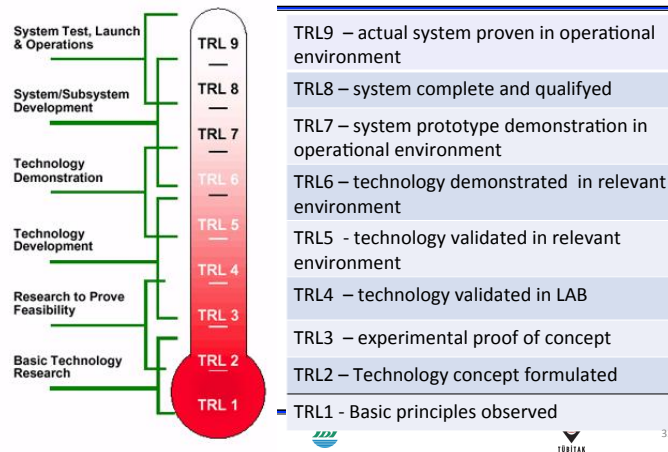
Technology Readiness Levels (TRLs)

- The use of TRLs as a measurement of the maturity level of particular technologies is a new development in Horizon 2020.
- TRLs provide a common understanding of a technology development status
- Many of the call topics have a defined TRL at which the implementation of the proposal is intended to start. For example a project has to start at TRL 3 and end at TRL 5.



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A measurement of the maturity level of technologies: a new development in H2020



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Innovation and the Private Sector

To ensure that innovation is happening in H2020

SME participation become obligatory in most projects. Around 20% of the total budget for Societal Challenges and LEITs must go to SMEs.

This is good news for SMEs, of course !

It is also an important message for universities: purely academic consortia in these 2 areas are out !



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Types of actions supported by grants

- **Research and Innovation Actions**
- **Innovation Actions**
- **Coordination and Support Actions**
- **SME instrument**
- ERANET Co-fund
- Pre-commercial procurement Co-fund
- Public procurement of innovative solutions Co-fund



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Research and innovation actions

- Actions primarily consisting of activities aiming to establish new knowledge and/ or to explore the feasibility of a new or improved technology, product, process, service or solution.
- For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment.



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Innovation actions

- Actions primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. Often specific TRL levels are required as a starting point.
- For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.



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Coordination and support actions

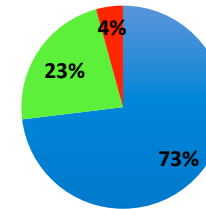
Actions consisting primarily of **accompanying measures** such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of networking and coordination between programmes in different countries.



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Specific opportunities for SMEs

A specific SME instrument comes under the H2020 objective of 'smart, sustainable and inclusive growth', however with a small budget!



- LEIT & S.C. without SMEs
- LEIT & S.C. SMEs only
- SME Instrument



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SME Instrument: The Three Project Phases

Around € 3 billion funding



The SME Instrument

Phase 1

Concept & Feasibility Assessment



- €50 000 lump sum for feasibility study
- Initial 10 page business proposal to be drafted
- 6 months in duration
- High competition (around 6% success rate)



The SME Instrument

Phase 2 Innovation Project



- Between €0.5 million and €2.5 million in EU funding (70%)
- Develop project through innovation strategy
- Draft a more developed, 30 page business plan
- 1-2 years in duration



The SME Instrument

Phase 3 – Commercialisation



- No direct funding
- Extensive support and coaching
- Facilitate access to risk finance
- Additional support and networking opportunities (EEN)



SMEinst-2016-2017



Stimulating the innovation potential of SMEs for a low carbon and efficient energy system

- Reducing energy consumption and carbon footprint by smart and sustainable use (including energy-efficient products and services as well as 'Smart Cities and Communities'),
- Low-cost, low-carbon electricity supply (including renewable energy as well as CCS and re-use),
- Alternative fuels and mobile energy sources,
- A single, smart European electricity grid,
- New knowledge and technologies, and
- Robust decision making and public engagement.



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SME-1 SME instrument phase 1

Cut-off dates: 03 May 2017
06 September 2017
08 November 2017



SME-2 SME instrument phase 2

Cut-off dates: 06 April 2017
01 June 2017
18 October 2017



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Example: Project "TAG" H2020-SMEINST-2-2015



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Example: Project "TAG" H2020-SMEINST-2-2015

Coordinator: LOJKA BILGI TEKNOLOJILERI VE SERVISLERI TICARET AS

Crowd-Sourcing technology to change how people and cars move in cities (from 1/10/15 to 31/3/17)



"TAG is revolutionizing carpooling for Smart Cities. We are following the disruptive market success of the likes of Airbnb regarding room bookings and Waze in terms of navigation, reaching valuations of tens of billions of Euros. However, well-documented technological problems and bad user experiences have prevented such success in carpooling."

1,745,362 Euro funding



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Work Programmes

What are these Work Programmes and what do they contain?

The Participants Portal:

Where to find them:

<http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/>



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http://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html

- Legal basis
 - Framework programmes (EC-Euratom)
 - Rules for participation
 - Specific programme
 - European Institute of Innovation and Technology (EIT)
- Grant agreements, contracts and rules of contest
 - Model grant agreements
 - Rules of contest of prizes
 - Contracts for experts
- Guidance
 - Section on beneficiary registration, validation and financial viability check
 - Section on proposal submission and evaluation
 - Annotated Model Grant Agreement
- Specific guidelines
 - ERC rules for submission and evaluation
- Work Programmes
 - 2014-15
 - 2016-17
 - 1. Introduction 2016-17_v2.0
 - 2. Future and Emerging Technologies (FETs) 2016-17_v2.0
 - 3. Marie Skłodowska-Curie actions (MSCA) 2016-17_v2.0
 - 4. Research infrastructures (including e-Infrastructures) 2016-17_v2.0
 - 5. Introduction to Leadership in enabling and industrial technologies (LEITs) 2016-17_v2.0
 - 5i. Information and communication technologies (ICT) 2016-17_v2.0
 - 5ii. Nanotechnologies, advanced materials, advanced manufacturing and processing, biotechnology 2016-17_v2.0
 - 5iii. Space 2016-17_v2.0
 - 6. Access to risk finance 2016-17_v2.0
 - Innovation in SMEs 2016-17_v2.0

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- 5iii. Space 2016-17_v2.0
6. Access to risk finance 2016-17_v2.0
7. Innovation in SMEs 2016-17_v2.0
8. Health, demographic change and wellbeing 2016-17_v2.0
9. Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy 2016-17_v2.0
10. Secure, clean and efficient energy 2016-17_v2.0
11. Smart, green and integrated transport 2016-17_v2.0

European Commission

EN

Horizon 2020

Work Programme 2016 - 2017

10. 'Secure, Clean and Efficient Energy'

HORIZON 2020 - Work Programme 2016 - 2017
'Secure, Clean and Efficient Energy'

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EE-02-2017: Improving the performance of inefficient district heating networks 17

EE-03-2016: Standardised installation packages integrating renewable and energy efficiency solutions for heating, cooling and/or hot water preparation..... 18

EE-04-2016-2017: New heating and cooling solutions using low grade sources of thermal energy 20

EE-05-2016: Models and tools for heating and cooling mapping and planning..... 23

2. Engaging consumers towards sustainable energy 25

EE-06-2016-2017: Engaging private consumers towards sustainable energy 26

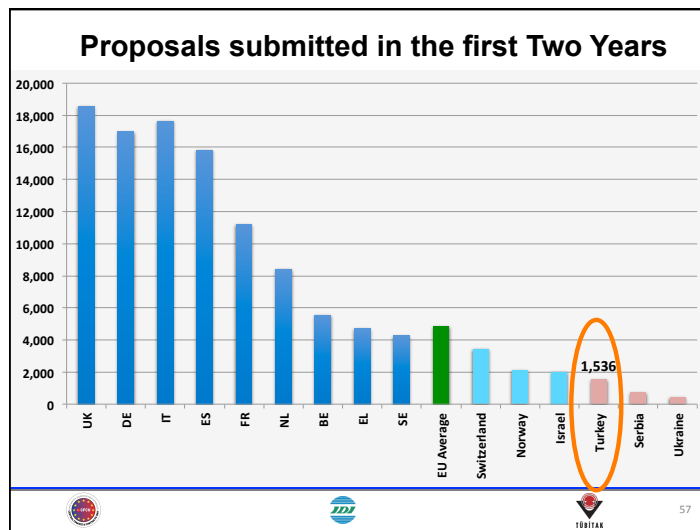


KEY FACTS AND FIGURES

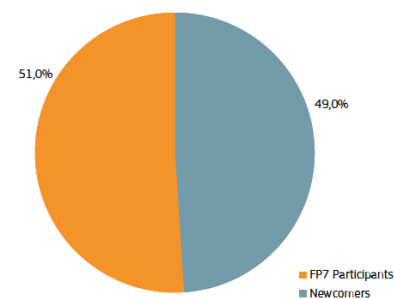
- Over **76,400 proposals** were submitted in the first two years, requesting a total contribution of €125.4bn.
- Around **9,200 proposals** were retained for funding. The overall success rate was **11.8%**.
- Over **9,000 grant agreements** were signed by 1/9/16, with a budget allocation of over **€15.9bn** funding.



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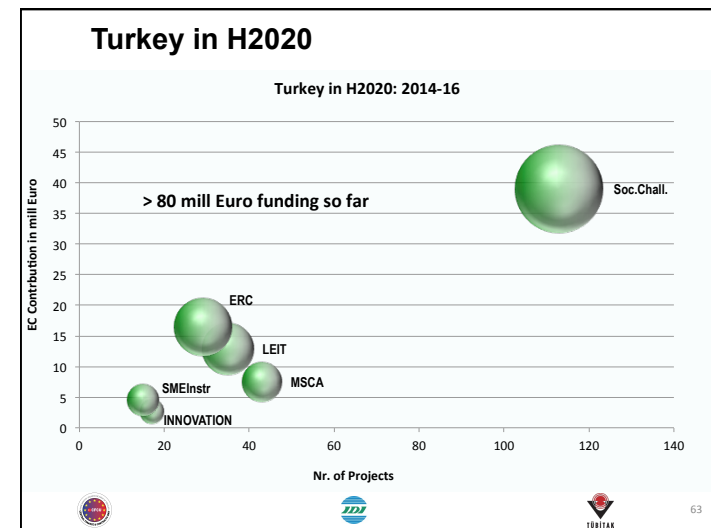
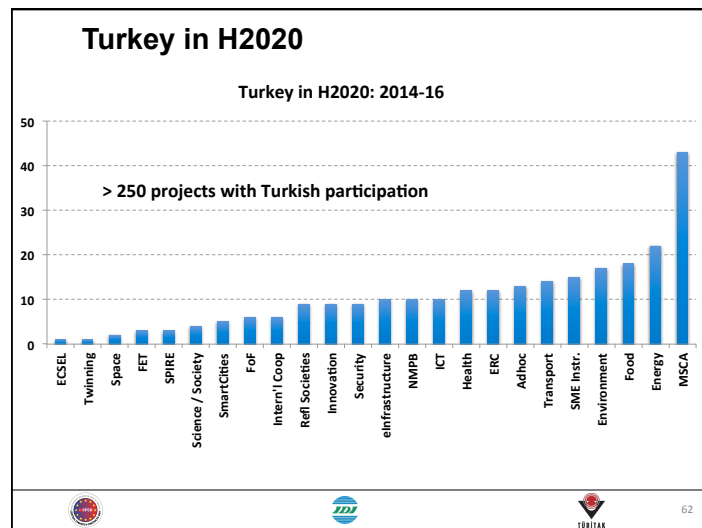
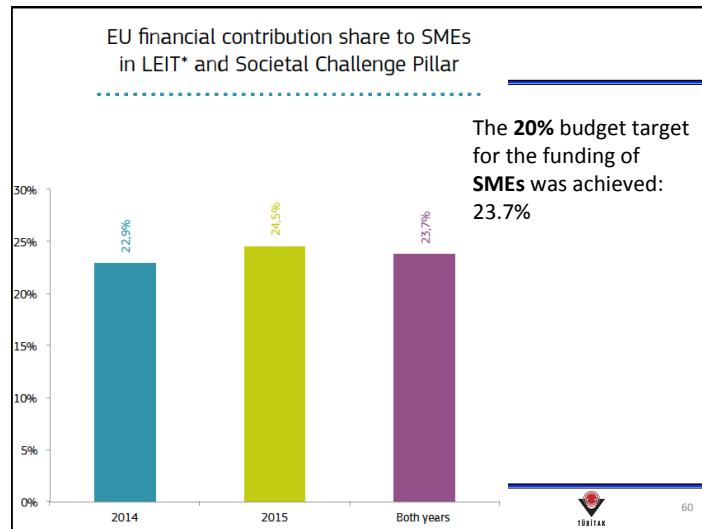
Newcomers in H2020



Around **49%** of the participants in Horizon 2020 are newcomers.



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Rules of Participation

Minimum conditions

- For standard collaborative actions
 - At least, 3 legal entities, each established in different MS/AC
- For SME Instrument, programme co-fund, CSA
 - 1 legal entity established in a MS/AC

Additional conditions

- To be set out in the Work Programme (i.e. number of participants, type of participants, etc.)



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Evaluation of proposals

Evaluation Criteria

- Excellence
- Impact
 - *Higher weighting for innovation actions*
- Quality and efficiency in the implementation

- Details, weightings and thresholds defined in WP
- Evaluation carried out by independent experts
- Possibility of a 2 stage submission procedure



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Simplified Funding Model

One reimbursement rate by action

The same rate for all beneficiaries and all activities:

- Up to 100% for Research and Innovation actions
- Up to 70% for innovation (non-profit entities up to 100%)
- Up to 70% for PCP co-fund, 33% for ERANET co-fund, 20% for PPI co-fund



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Simplified Funding Model

A single method for calculation of indirect costs:

- Flat rate of 25% of total direct costs, excluding subcontracting, costs of third parties and financial support to third parties



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Eligible costs

Main cost categories:

- Personnel costs
- Costs of subcontracting
- Other direct costs
 - Travel costs and subsistence allowances
 - Depreciation costs of equipment
 - Costs of other goods and services (including non-deductible VAT)



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