# The European Research Council

ERC funding opportunities in Horizon Europe
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Head of Unit ERCEA B3 'Life Sciences'





### WHAT IS THE ERC?



#### **ERC Is Different**

#### Scientific Governance

- Independent Scientific Council with 22 members including the ERC President; full authority over funding strategy
- Support by a Dedicated Implementation Structure (ERC Executive Agency)

#### Scientific Freedom

- Scientific excellence as the only criterion
- Support to the individual scientist no consortia!
- No predetermined subjects (bottom-up)
- Support to frontier research in all fields of science and humanities
- International peer-review







### **ERC** in Horizon Europe





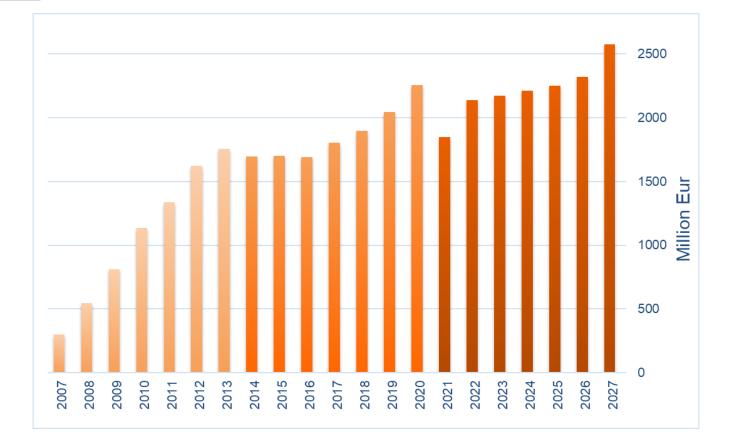


### **ERC** Budget



H2020

HE







#### **ERC Structure**



#### The European Commission

- Provides financing through the EU framework programmes
- Guarantees autonomy of the ERC
- Assures the integrity and accountability of the ERC
- Adopts annual work programmes as established by the Scientific Council

#### The ERC Scientific Council

- 21 prominent researchers proposed by an independent identification committee
- President appointed following recommendation of an independent committee
- Appointed by the Commission (4 years, renewable once)
- Establishes overall scientific strategy; annual work programmes (incl. calls for proposals, evaluation criteria); peer review methodology; selection and accreditation of experts
- Controls quality of operations and management
- Ensures communication with the scientific community







#### **ERC Scientific Council Members**





Prof. Eveline CRONE (Psychology) Vice-President



Prof. Maria LEPTIN (Biology) ERC President



Prof. Andrzej JAJSZCZYK (Electronics and Communication Engineering) Vice-President



Prof. Nektarios TAVERNARAKIS (Molecular Systems Biology) Vice-President



Prof. Geneviève ALMOUZNI (Biology)



Prof. Paola BOVOLENTA (Neurobiology)



Prof. Ben FERINGA (Organic Chemistry)



Prof. Mercedes GARCÍA-ARENAL (History)



Prof. Gerd GIGERENZER (Psychology)



Prof. Liselotte HØJGAARD (Medicine)



Prof. Dirk INZÉ (Plant Biology)



Prof. Eystein JANSEN (Earth Science)



Prof. Chryssa KOUVELIOTOU (High-Energy Astrophysics)



Prof. László LOVÁSZ (Mathematics)



Prof. Kurt MEHLHORN (Computer Science)



Prof. Nicola SPALDIN (Materials Theory)



Prof. Giovanni SARTOR (Law)



Prof. Jesper SVEJSTRUP (Biology)



Prof. Alice VALKÁROVÁ (Physics)



Prof. Milena ŽIC FUCHS (Linguistics)





#### **ERC Structure**

# The ERC Dedicated Implementation Structure - ERC Executive Agency

- Executes annual work programme as established by the Scientific Council
- Implements calls for proposals and provides information and support to applicants
- Organises peer review evaluation
- Establishes and manages grant agreements
- Administers scientific and financial aspects and follow-up of grant agreements
- Carries out communications activities and ensures information dissemination to ERC stakeholders







#### **ERC Grant Schemes**



#### **Starting Grants**

starters (2-7 years after PhD) up to € 1.5 Mio for 5 years



#### **Advanced Grants**

track-record of significant research achievements in the last 10 years up to € 2.5 Mio for 5 years



#### **Consolidator Grants**

Consolidators (7-12 years after PhD) up to € 2 Mio for 5 years



#### **Synergy Grants**

2 – 4 Principal Investigators up to € 10.0 Mio for 6 years 1 PI can be based outside EU/AC



#### **Proof-of-Concept**

bridging gap between research - earliest stage of marketable innovation lump sum €150,000 for ERC grant holders





#### Creative Freedom to Individual Grantee

#### ERC offers independence, recognition & visibility

- to work on a research topic of own choice, with a team of own choice
- to gain true financial autonomy for 5 years
- to negotiate with the host institution the best conditions of work
- to attract top team members (EU and non-EU) and collaborators
- to move with the grant to any place in Europe if necessary (portability of grants)
- to attract additional funding and gain recognition; ERC is a quality label



# Evaluation Panel Structure (2021-2023)

#### Life Sciences

- LS1 Molecules of Life: Biological Mechanisms, Structures and Functions
- LS2 Integrative Biology: From Genes and Genomes to Systems
- LS3 Cellular, Developmental and Regenerative Biology
- LS4 Physiology in Health, Disease and Ageing
- LS5 Neuroscience and Disorders of the Nervous System
- LS6 Immunity, Infection and Immunotherapy
- LS7 Prevention, Diagnosis and Treatment of Human Diseases
- LS8 Environmental Biology, Ecology and Evolution
- LS9 Biotechnology and Biosystems Engineering





#### Physical Sciences & Engineering

- PE1 Mathematics
- PE2 Fundamental Constituents of Matter
- PE3 Condensed Matter Physics
- PE4 Physical and Analytical Chemical Sciences
- PE5 Synthetic Chemistry and Materials
- PE6 Computer Science and Informatics
- PE7 Systems and Communication Engineering
- PE8 Products and Process Engineering
- PE9 Universe Sciences
- PE10 Earth System Science
- PE11 Materials Engineering

#### Social Sciences and Humanities

- SH1 Individuals, Markets and Organisations
- SH2 Institutions, Governance and Legal Systems
- SH3 The Social World and Its Diversity
- SH4 The Human Mind and Its Complexity
- SH5 Cultures and Cultural Production
- SH6 The Study of the Human Past
- SH7 Human Mobility, Environment, and Space

#### How are the ERC proposal evaluated?

STEP 1

#### For individuals ERC calls: a single submission but a two step evaluation

STEP 2

Remote assessment by Panel members Remote assessment by **Panel members** see ONLY section 1: Synopsis and CV and Remote Reviewers of full proposals (Part B1) (Part B1+B2) Scientific Quality is the sole Panel meeting Panel meeting + interview StG, CoG and AdG evaluation criterion Ranked list of proposal Proposal Rejected Proposal Retained (Scores A&B) (Scores B&C) For step 2 (Score A)

Feedback to applicants





### Typical reasons for rejection

#### **Research Project**

- Scope: Too narrow vs too broad/unfocussed
- Incremental research
- Collaborative project, several PIs
- Work plan not detailed enough/unclear
- Insufficient risk management

#### **Principle Investigator (PI)**

- Insufficient track-record
- Insufficient (potential for) independence





### Contrary to what You May Think

- ERC funds "frontier research", including applied research
- The budget is distributed among the scientific panels as a function of demand
- The panel descriptors do not represent ERC scientific priorities
- The success rates are virtually flat across the eligibility window (StG, CoG)
- The publication record is not decisive in selection decisions
- The Host Institution is not an evaluation criterion





### ERC in Figures: After 15 Years, a Success Story



Over **11,000** top researchers funded since the ERC creation in 2007



Over **80,000** researchers and other professionals employed in ERC research teams



Over **2,200**patents and other IPR applications generated by ERC funding



Over **400** start-ups identified as founded or co-founded by ERC grantees



Over **200,000** articles from ERC projects published in scientific journals



Over **890** research institutions hosting ERC grantees – universities, public or private research centres in the EU or Associated Countries



87
nationalities of grant holders



9 Nobel Prizes, 4 Fields Medals, 11 Wolf Prizes and other prizes awarded to ERC grantees

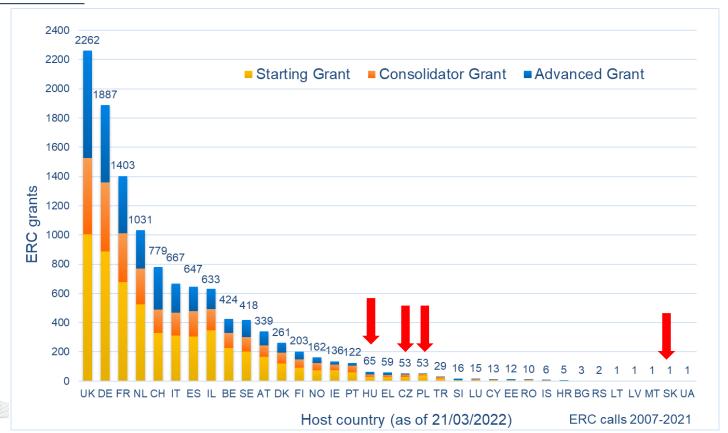




### **ERC STATISTICS**



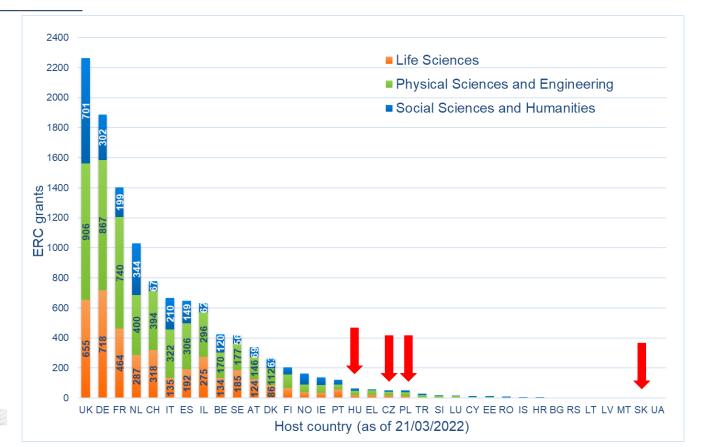
### **ERC Funded Projects by Country of HI**







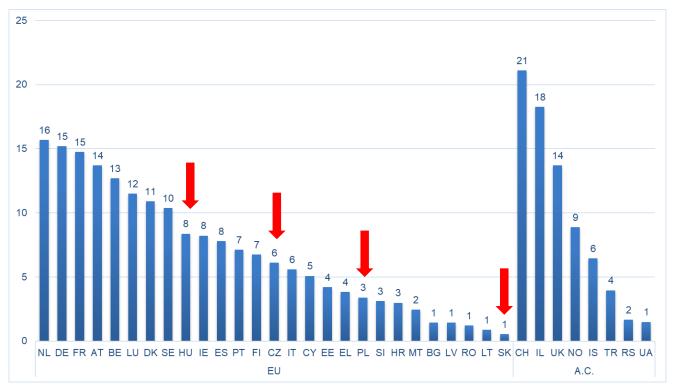
### **ERC Funded Projects by Domain**







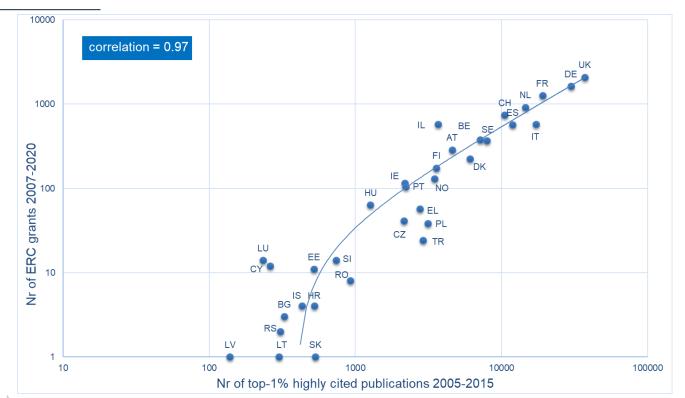
### Success Rate by Country of HI







### **ERC Grants versus Top Publications**



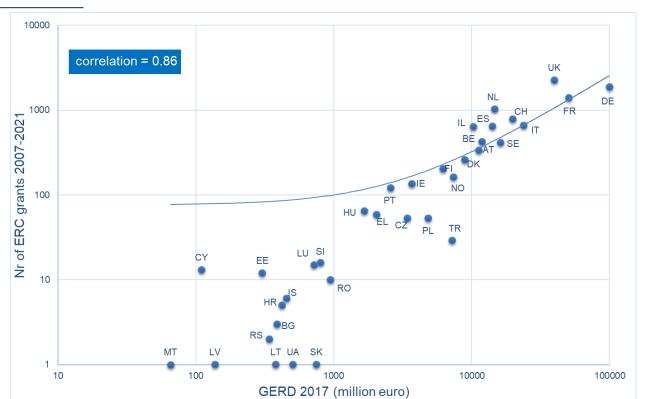
Linear fit

Host countries as of 26/08/2020





#### **ERC Grants versus GERD**



Linear fit

Host countries as of 21/03/2022

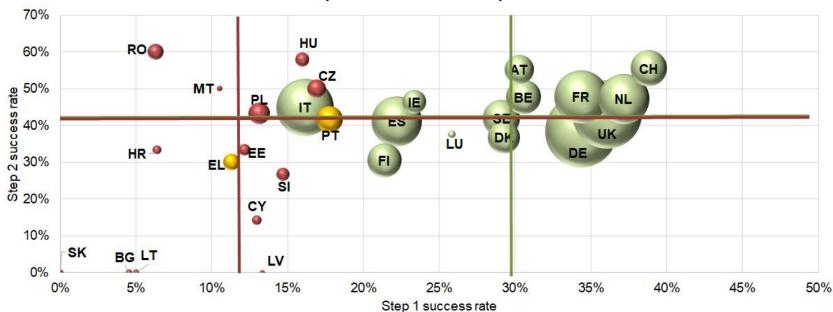




#### H2020 Success rates for all Member States and CH - STG

	Step 1 SR	Step 2 SR	
EU13	12.28%	42.86%	
<b>EU1</b> 5	29.62%	42.94%	

#### H2020 STG step 1 success rate vs Step 2 success rate



#### H2020 Success rates for all Member States and CH - CoG

	Step 1 SR	Step 2 SR	
EU13	14.75%	38.66%	
<b>EU</b> 15	33.17%	40.68%	

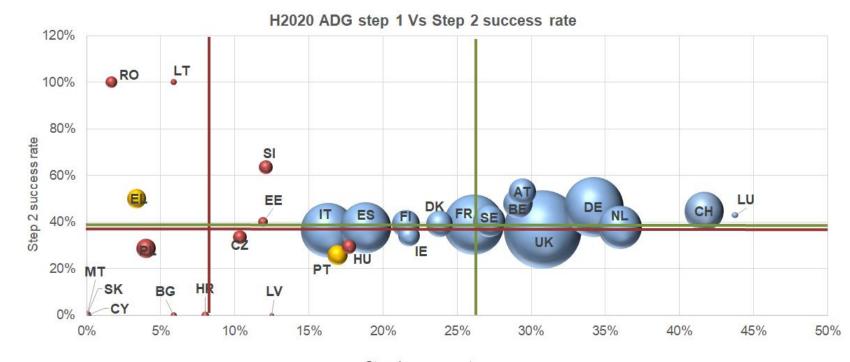




European Commission

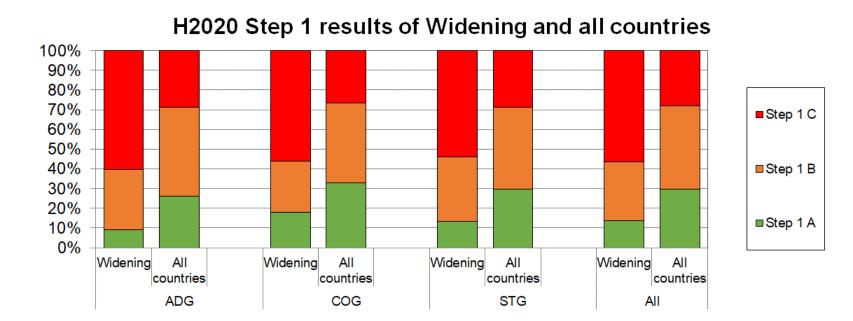
#### H2020 Success rates for all Member States and CH - AdG

L		Step 1 SR	Step 2 SR
	EU13	8.22%	38.18%
	EU15	26.72%	39.90%





### H2020 Step 1 results from widening countries







## **ERC** Widening Participation Policies



### **Objectives**

- To capitalise on the full European potential for frontier research without departing from the ERC's principle of excellence
- Contribute to a truly inclusive European culture of competitiveness in science
- Strengthen participation in ERC calls by researchers from less research-performing regions
- Facilitate policy dialogue with relevant stakeholders to promote national and local support to promising scientists in less research-performing regions



### How: Inspiring Reform

- More than 15 countries introduced initiatives to finance their best unfunded ERC applicants.
- A number of countries established funding schemes inspired to the ERC model.
- Ex:In Poland the National Science Centre (NCN) has been set up in 2010 to fund basic research, with ERC as an explicit model





#### **How: Concrete Measures**

- Continuously monitoring the participation to the ERC calls and the success rates
- Guaranteeing a fair evaluation processes in view of optimal inclusiveness
- Raising awareness on ERC among potential applicants and host institutions
- Providing recommendations to national policy-makers, such as:
  - ✓ support ERC finalists with national funding
  - ✓ support ERC applicants improve their proposals
  - make participation in ERC calls an essential component in national evaluations
  - ensure a truly and competitive academic environment

### ERC Visiting Fellowship Programmes (VFP)

ERC promotes the efforts of national and regional authorities that set up and fund mobility programmes to allow potential ERC candidates to visit and gain experience with ERC-funded teams

#### VFP in few points:

- Duration of visits 1-6 months (up to 2019 the minimum duration was 3 month)
- Visiting fellows commit to apply for an ERC grant in specified timeframe
- Visiting fellows need to have a letter of support of the proposed host researcher and institution when applying
- National/regional funding agencies cover the travel and salary costs of the fellows for the duration of the visit



### **ERC VFP participation**

#### **9 countries/regions participate** in the scheme as of today:

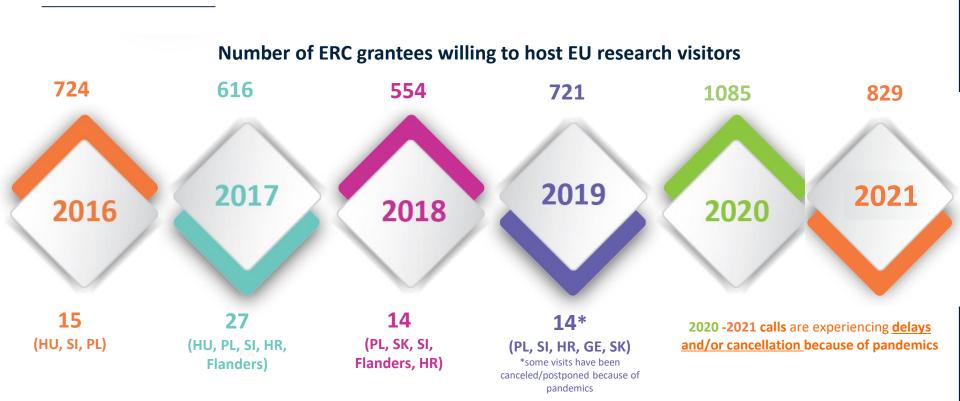
- Czech Republic (not participating since 2021)
- Estonia
- Poland (not participating since 2020)
- Slovenia
- Belgium (Flanders region)
- Slovak Republic SAS & Pavol Jozef Safarik University in Kosice UPJS (since 2020)
- Croatia
- Georgia (new in 2018)
- Hungary (not participating since 2018) Politehnica University of Bucharest (new in 2019)
- Republic of Serbia (new in 2020)
- Italy CNR (new in 2021) & University of Venice Ca' Foscari (will join in 2022)







#### VFP: Interested ERC Grantees and Number of Visits



#### **Number of visiting researchers**

#### VFP: Interested ERC Grantees and Number of Visits

Number of Visiting Fellowships by Country of Scheme						
	2016	2017	2018	2019	Total	
Croatia		4	1	2	7	
Flanders		1	2		3	
Georgia				3	3	
Hungary	1	10			11	
Poland	7	8	5	4	24	
Slovak Republic			4	2	6	
Slovenia	7	4	2	3	16	
Total	15	27	14	14	70	

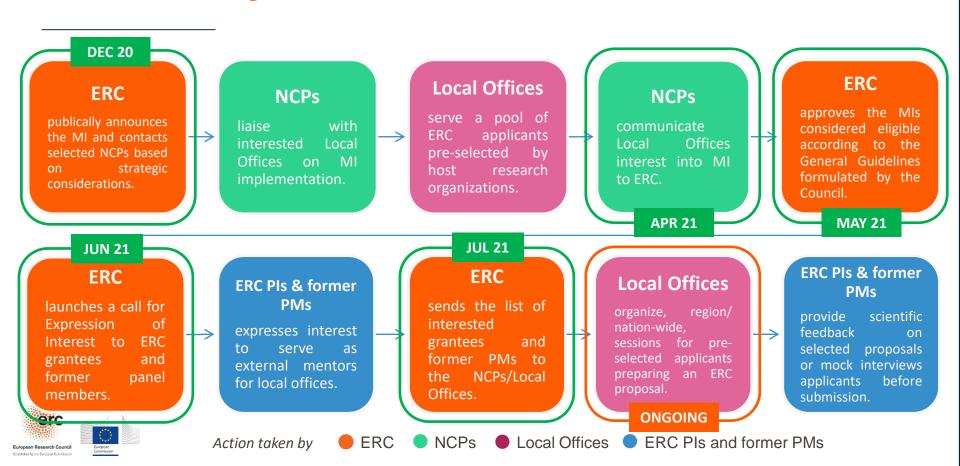
### VP Fellows Participation in ERC calls

- 58 visiting fellows have submitted 61 proposals for an ERC grant after the VFP:
  - 36 (59%) to STG
  - 18 (30%) to COG
  - 7 (11%) to ADG
- 8 visiting fellows (13%) were funded with ERC grants:
  - 4 in PE (PE4, PE8)
  - 3 in SH (SH3, SH5)
  - 1 in LS (LS8)
- 6 of the funded projects are located in EU-13 countries (SI and PL), 2 of the awarded fellows changed HI (BE->UK, HR->IT)
- The success rate of VFP fellows is higher than Widening countries, in particular for STG
- 16% and 20% of STG ERC grantees 2018-2021 for PL and SI were VFP fellows





- ERC wishes to contribute to national programmes that support ERC applicants in less performing countries
- These national programmes often lack access to international expertise to mentor ERC applicants
- To address the problem, ERC identifies a pool of mentors among its grantees and former evaluators, available to provide training, scientific feedback, and other forms of mentoring to ERC applicants in less performing countries
- How: ERC launches yearly calls for interest among its grantees and former evaluators.
   The list is provided to target countries via the National Contact Points



#### Participants in 2021:

- Cyprus (Research and Innovation Foundation; coordinates NCPs)
- Czech Republic (Czech National Expert Group; closely cooperates with the NCP)
- Estonia (The Estonian Research Council; plays the role of the NCP)
- Hungary (Hungarian Academy of Sciences; hosts NCP)
- Italy (Italian National Research Council; will operate through NCPs)
- Malta (Malta Council for Science and Technology; plays the role of the NCP)
- Poland (NCP through NCBR, NCN, and FNP)
- Slovakia (Horizon National Office in Slovakia)
- Turkey (TUBITAK; plays the role of the NCP)



#### **Preliminary results:**

- 750 ERC grantees and former panel members expressed their interest in becoming mentors
- ERCEA sent the list of potential mentors to National Contact Points in the nine countries
- National offices identified prospective ERC applicants and are now organizing mentoring activities



### Supporting features & actions

- Visiting Research Fellowships: a number of European countries fund research visits to established ERC projects in order to develop researchers' potential before they apply for their first ERC grant.
- Mentoring Initiative: helps identifying international experts to provide coaching and advice.
- **Dual affiliation is possible**: ERC grantees are required to spend 50% of their time in Europe, no need to burn bridges.
- Additional max. 1M EUR extra funding/PI to cover 'start-up' costs, regardless of the call (except POC).
- Jobs in ERC teams



#### Thank You!

More information: erc.europa.eu

National Contact Point: erc.europa.eu/national-contact-points

Sign up for news alerts: erc.europa.eu/keep-updated-erc

Funding & Tender Opportunities: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home

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