HORIZON 2020

LE PROGRAMME DE RECHERCHE ET D'INNOVATION DE L'UNION EUROPÉENNE

Demi-journée d'information et de réseautage
Nanotechnologies, Matériaux, Process

Villeurbanne, 04/07/2019

M. Bruyère
PCN-NMBP

« NMBP » in European calls : from Horizon 2020 to Horizon Europe

NMBP general objectives and specificities in Work Program for 2020

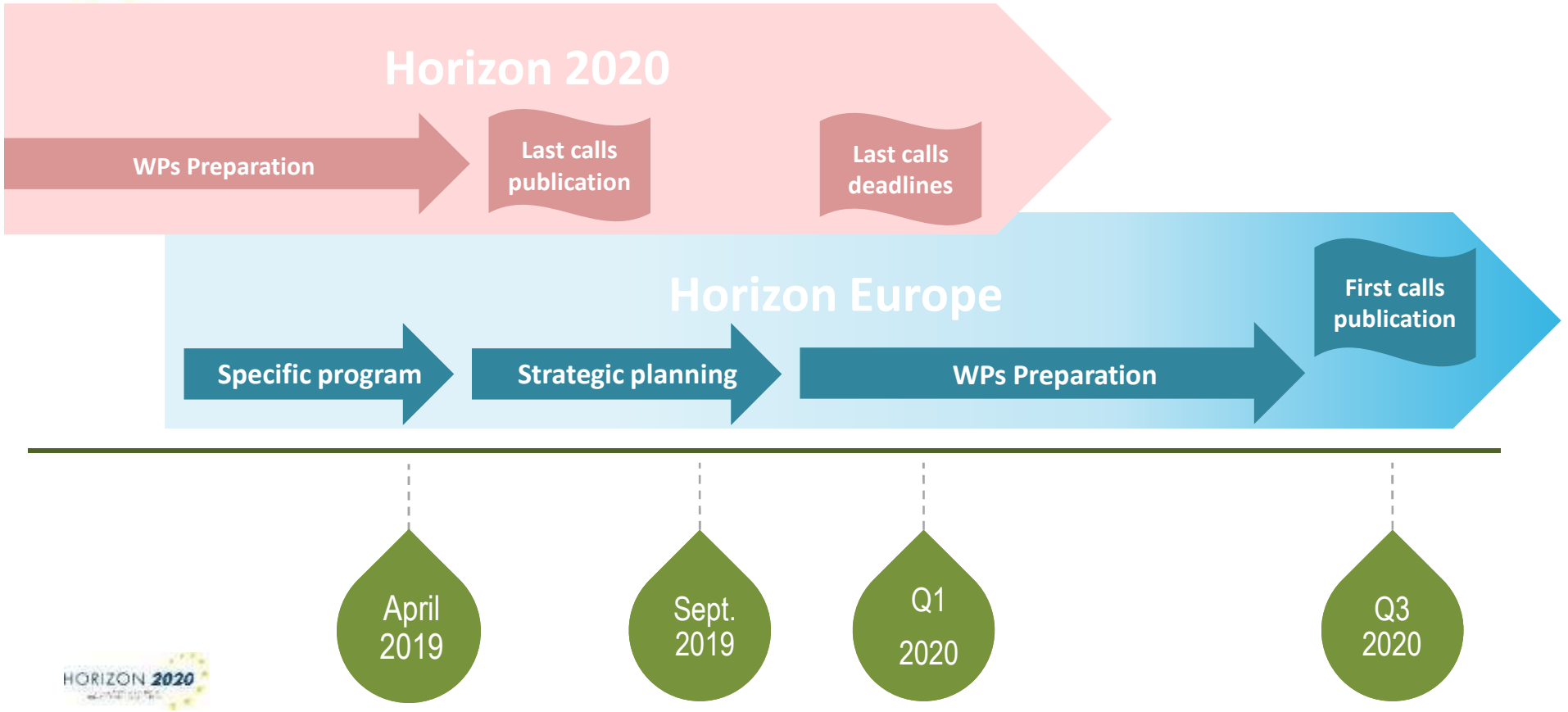
Presentation of 2020 calls

Support

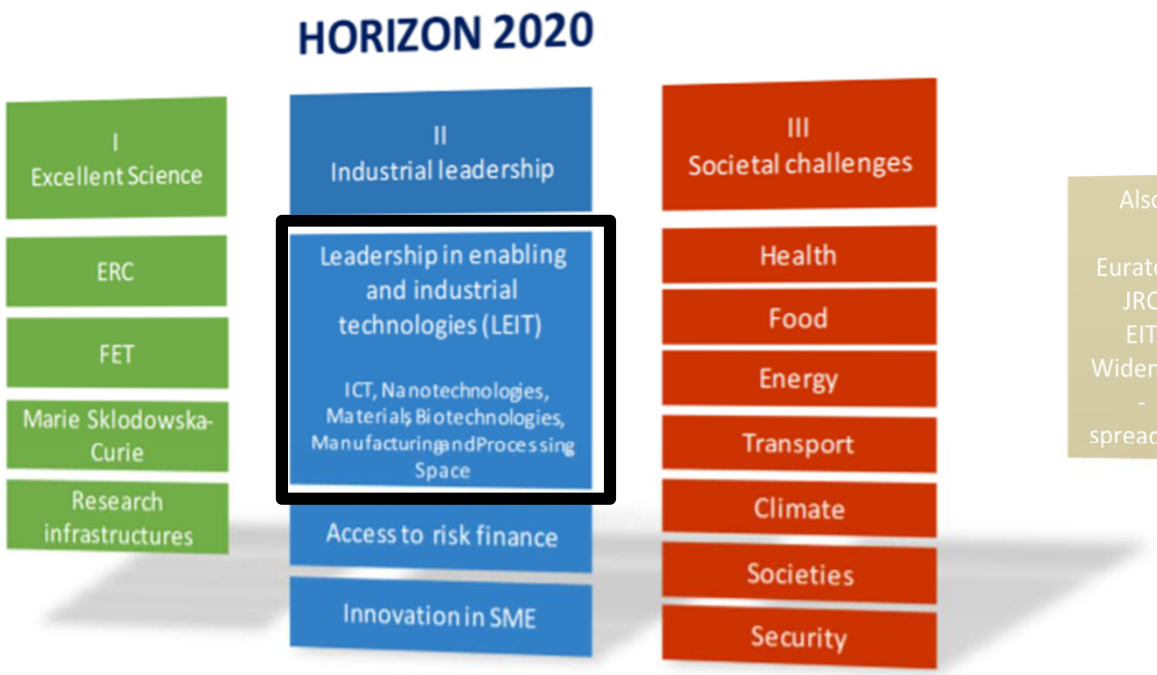
« Nanotechnologies, Materials, Biotechnologies and Processes » in European calls

From Horizon 2020 to Horizon Europe

Timeline


Horizon 2020
WPs Preparation
Last calls publication
Last calls deadlines
Horizon Europe
Specific program
Strategic planning
WPs Preparation
First calls publication
April 2019
Sept. 2019
Q1 2020
Q3 2020

Today



Autres programmes liés à Horizon 2020

Aéronautique : Clean Sky	Ferroviaire : Shift2Rail	
Fuel cell and Hydrogen : FCH	Biotech : BBI	Electronique : ECSEL

Tomorrow

European Commission

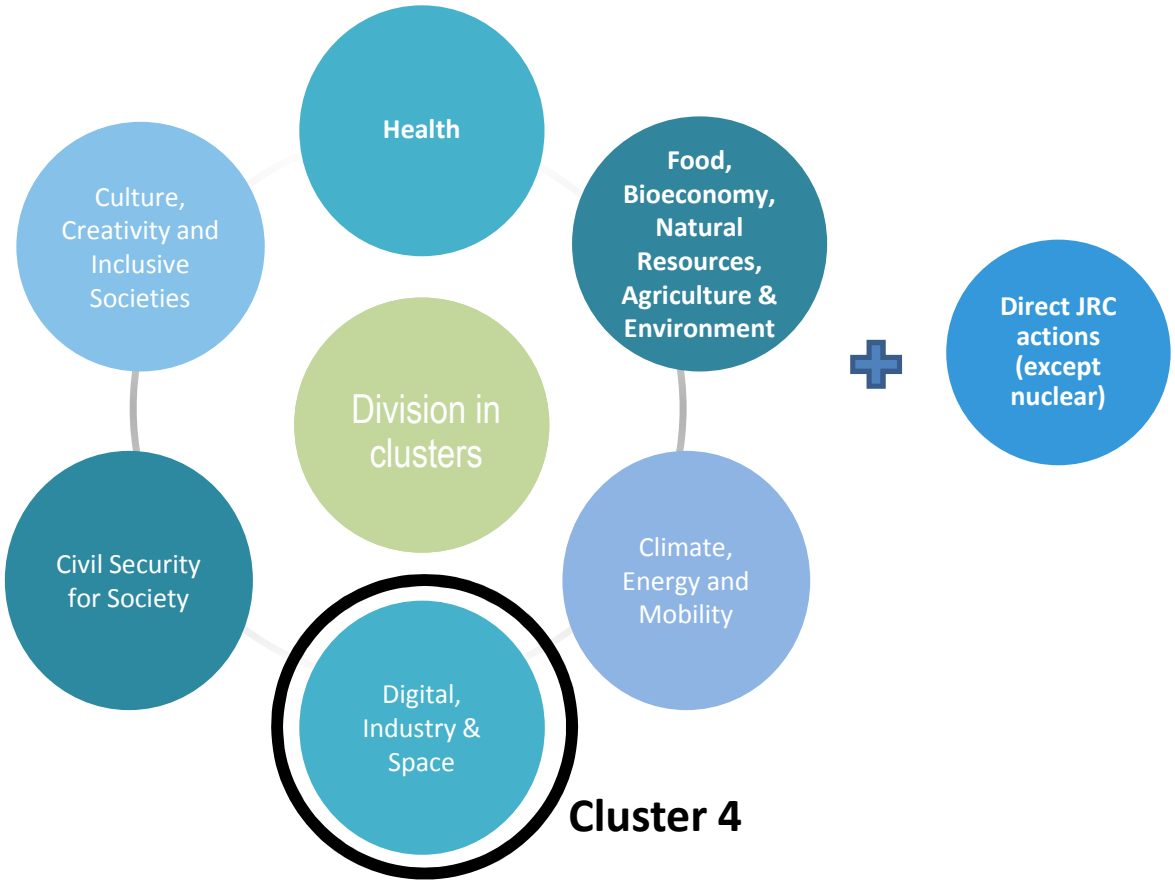
Commission proposal for

Horizon Europe

THE NEXT EU RESEARCH & INNOVATION PROGRAMME (2021 – 2027)

#HorizonEU

Pillar 2 - Clusters
Global Challenges & European Industrial Competitiveness



NMBP in Horizon 2020

H2020 NMBP

- NMBP: mastering and deploying enabling technologies
  - ✓ For industry
  - ✓ For societal challenges
- Includes
  - ➢ three cPPPs: manufacturing and process industries, energy-efficient buildings (~50%)
  - ➢ Nanotechnologies, Advanced materials, Biotechnology (~50%)
- Based on industrial roadmaps, with ever increasing emphasis on impact
- Emphasis on demonstrators (TRLs 5-7)
- Some key figures:
  - Industrial partners: 67% of distinct partners
  - Newcomers: 45% of partners not in FP7-NMP
  - Projects / topic: 3

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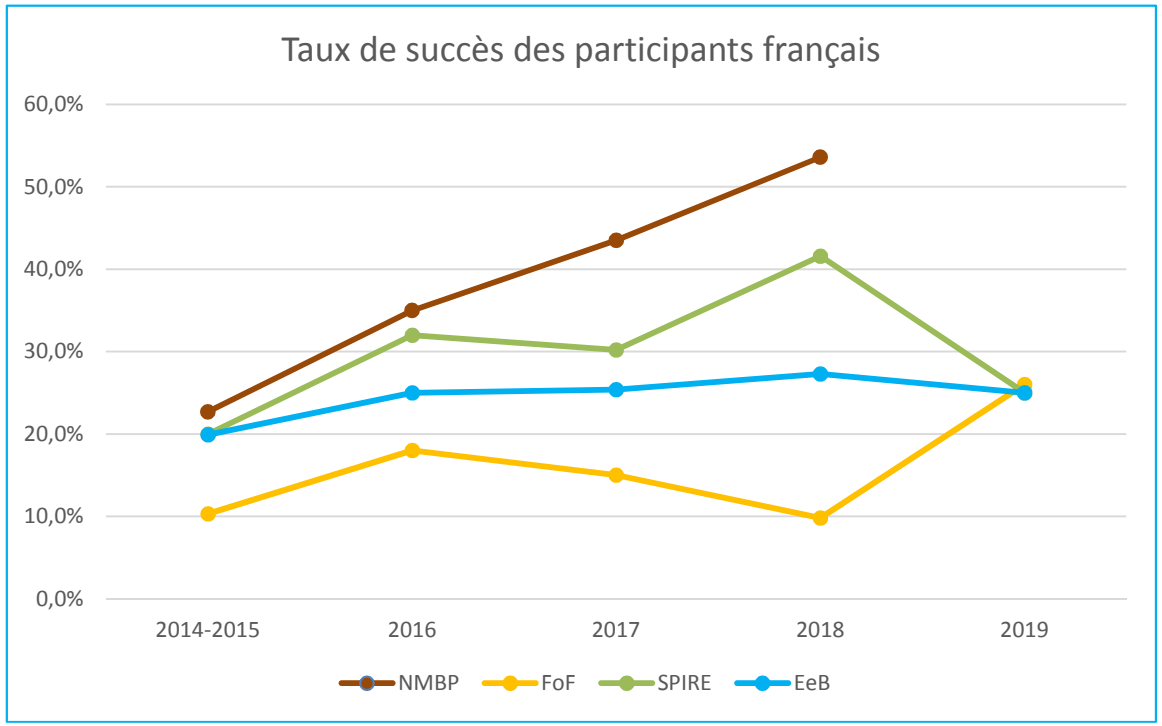
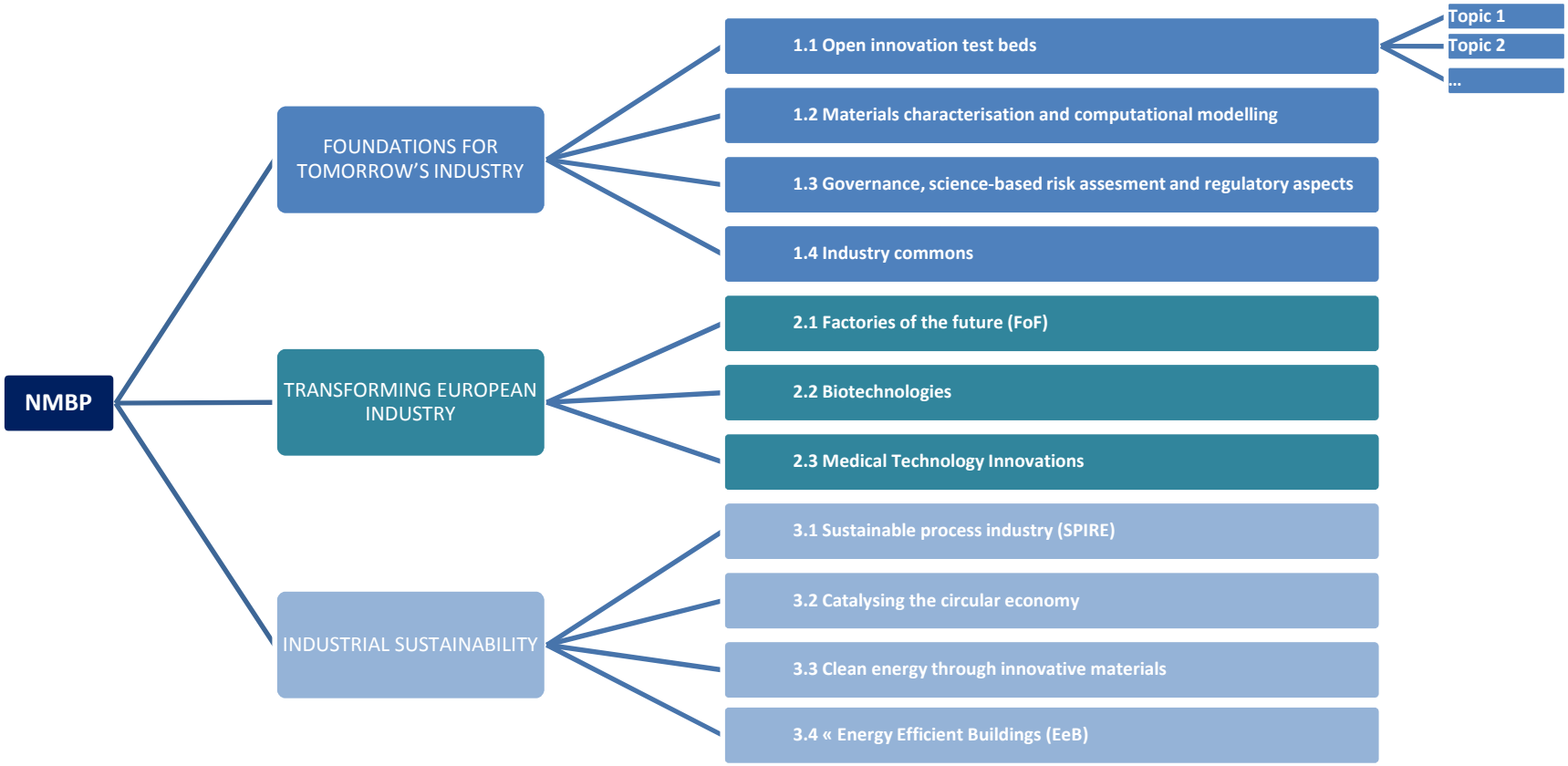
Evolution des résultats français dans H2020



principaux appels NMBP

What type of subjects ?
Call structuration



Specificities for WP 2020 calls

Orientations WP 2020

- Publication: 4 July 2019
- 2020 Deadlines
  - Two-stage topics: 12 December 2019 (1st stage) and 14 May 2020 (2nd stage)
  - Single-stage topics (PPP, CSA & CE-NMBP-42-2020): 5 February 2020
  - CE-BIOTEC-08-2020: 15 April 2020

- New: All Horizon 2020 battery topics grouped in a single dedicated program : « CROSS CUTTING »
  - Deadlines : 4 topics on 01 January 2020 ; 4 topics on 21 April 2020

European Commission

Orientations WP 2020

- More digital : data and artificial intelligence
  - European policy background (“Digitising European industry”)
  - Obligation to have Open data in projects
  - Increased importance of data in topics

Last Horizon 2020 calls
→
Transition to Horizon Europe

- Strengthened importance of “”Impact”
  - During the project and after the project’s end
  - Participants : industrials and new comers
  - Some IA : 50% reimbursement for industrials
  - Most proposals for RIA and IA should include a **business case** and **exploitation strategy**

- Contribution to UN Sustainable Development Goals (SDG)
  - 'Building a low-carbon, climate resilient future‘
  - 'Connecting economic and environmental gains – the Circular Economy'

European Commission

Presentation of 2020 calls

Before you read the calls

- Three different funding schemes

Type	Reimbursment for profit partners	Reimbursment others
CSA	100% + 25% otherheads	
RIA		
IA	70% + 25% otherheads	100% + 25% otherheads

- The topic is organised in 3 parts
  - Specific challenge : why the European Commission funds this topic
  - Focus : what you have to do in the project
  - Impact : what the results of your project have to contribute to

European Commission

Open Innovation Test Beds (111.5M€)

Topic Title	Type
DT-NMBP-04-2020: Open Innovation Test Beds for **nano-enabled bio-based materials**	IA
DT-NMBP-05-2020: Open Innovation Test Beds for **materials for building envelopes**	IA
DT-NMBP-06-2020: Open Innovation Test Beds for **nano-pharmaceuticals production**	IA

What are they?

- Physical facilities offering technology access and services to advance from validation in a laboratory (TRL 4) to prototypes in industrial environments (TRL 7)
- Users : mostly oriented towards SMEs

European Commission

Materials Characterisation and Computational Modelling (24M€)

Topic Title	Type
DT-NMBP-11-2020: Open Innovation Platform for Materials Modelling	RIA
NMBP-35-2020: Towards harmonised characterisation protocols in NMBP	RIA

Industry Commons (8M€)

Topic Title	Type
DT-NMBP-39-2020: Towards Standardised Documentation of Data through taxonomies and ontologies	CSA
DT-NMBP-40-2020: Creating an open market place for industrial data	RIA

European Commission

FOUNDATIONS FOR TOMORROW'S INDUSTRY

Governance, Science-based Risk Assessment and Regulatory Science

(18M€)

Topic Title	Type
NMBP-16-2020: Safe by design, from science to regulation: multi-component nanomaterials	RIA
NMBP-36-2020: Monitoring and safety of transport infrastructures	CSA
NMBP-37-2020: Incentivising newcomers	CSA
NMBP-38-2020: Citizens and industrial technologies	CSA

European Commission

Factories of the Future (100M€)

Topic Title	Type
DT-FOF-07-2020: Assembly of micro parts	RIA
DT-FOF-09-2020: Energy-efficient manufacturing system management	IA
DT-FOF-10-2020: Pilot lines for large-part high-precision manufacturing	IA 50%
DT-FOF-11-2020: Quality control in smart manufacturing	IA

European Commission

Sustainable Process Industry – SPIRE (32.5M€)

In Work Program NMBP

Topic Title	Type
LC-SPIRE-08-2020: Novel high performance materials and components	RIA
DT-SPIRE-11-2020: Artificial Intelligence and Big Data Technologies for Process Industries	CSA

In Work program CROSS CUTTING

Topic Title	Type
CE-SPIRE-01-2020 : Tapping into the potential of Industrial Symbiosis	IA
CE-SPIRE-07-2020 : Preserving fresh water: recycling industrial waters industry	IA
CE-SPIRE-09-2020 : Alternative mineral resources for high volume production	IA

European Commission

Clean Energy through Innovative Materials

(30M€ from NMBP + 10M€ from SC3)

Topic Title	Type
LC-SC3-RES-9-2020: Next generation of thin-film photovoltaic technologies	IA
LC-NMBP-31-2020: Materials for off shore energy	IA

NB: Previously announced LC-NMBP-28-2020 now LC-SC3-RES-9-2020
- in WP part of Societal Challenge 3 - Energy

European Commission

INDUSTRIAL SUSTAINABILITY

Energy-efficient Buildings (52.5M€)

Topic Title	Type
LC-EEB-04-2020: Industrialisation of building envelope kits for the renovation market	IA
LC-EEB-07-2020: Smart Operation of Proactive Residential Buildings	IA
LC-EEB-08-2020: Digital Building Twins	RIA
NB: the following topics previously announced will not be re-opened in 2020: • *LC-EEB-05-2019-20: Integrated storage systems for residential buildings* • *LC-EEB-06-2018-20: ICT enabled, sustainable and affordable residential building construction, design to end of life*	

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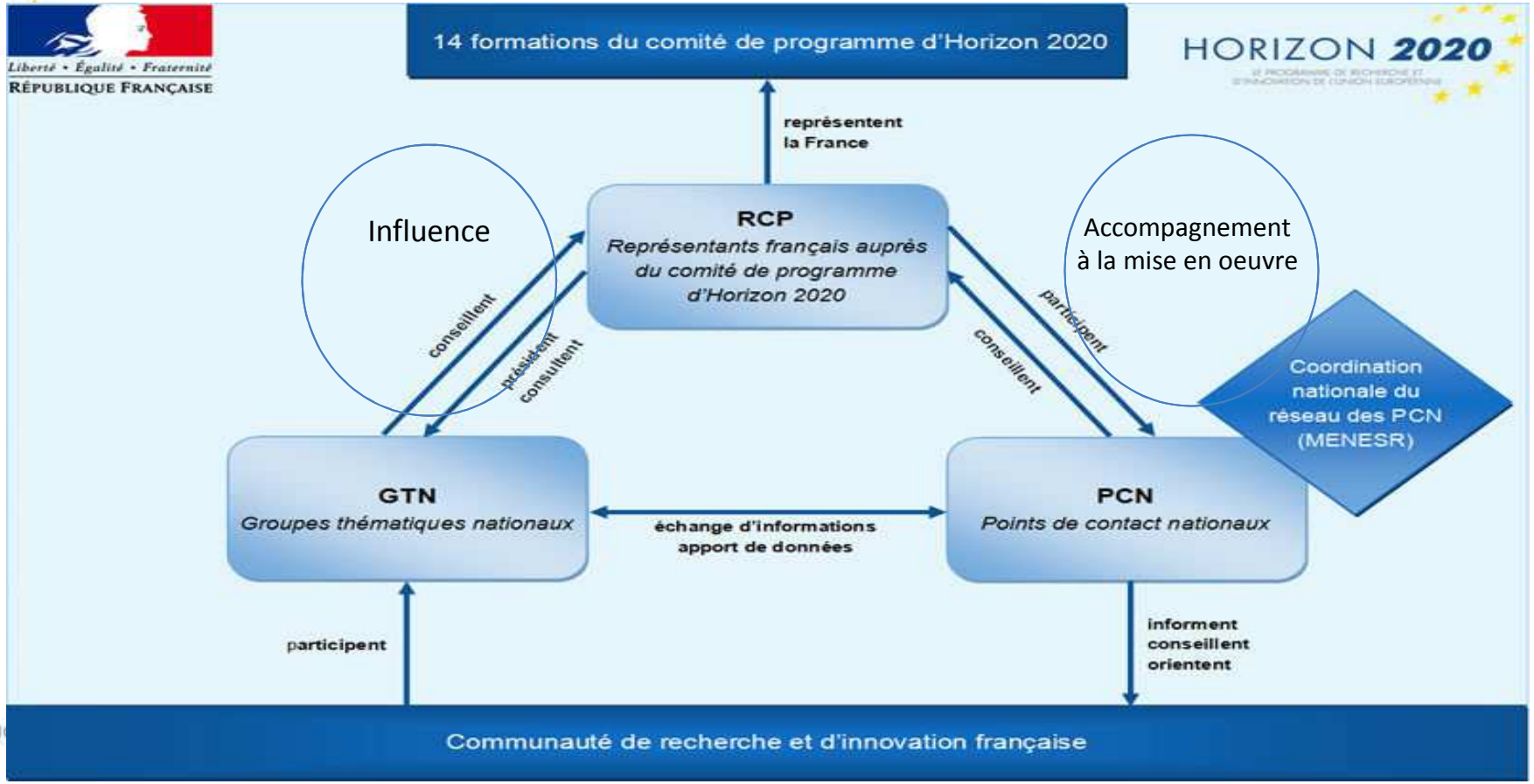
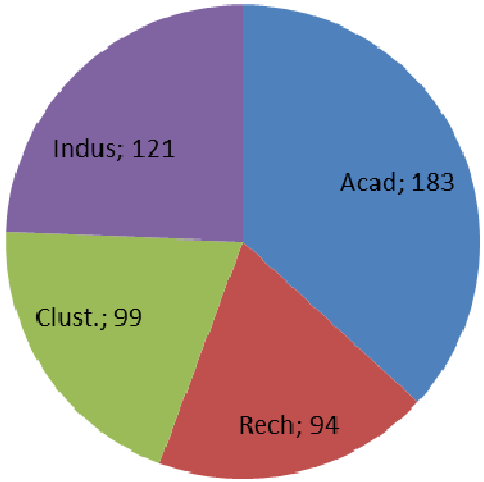
Organisation



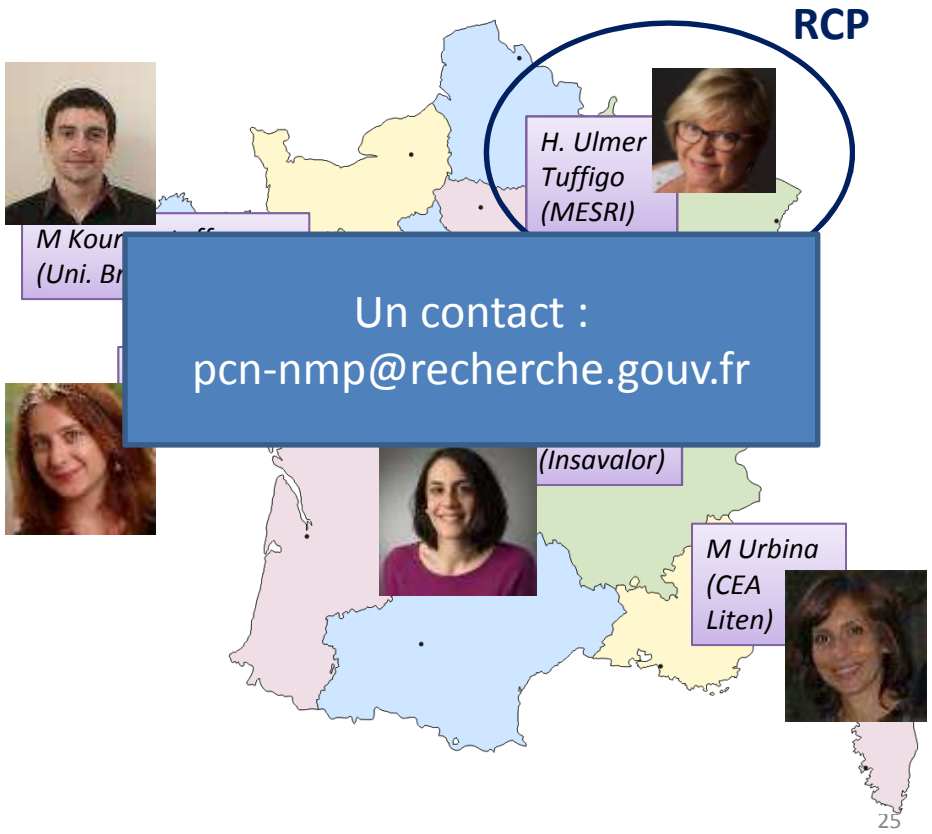
PCN et GTN NMBP

GTN NMBP

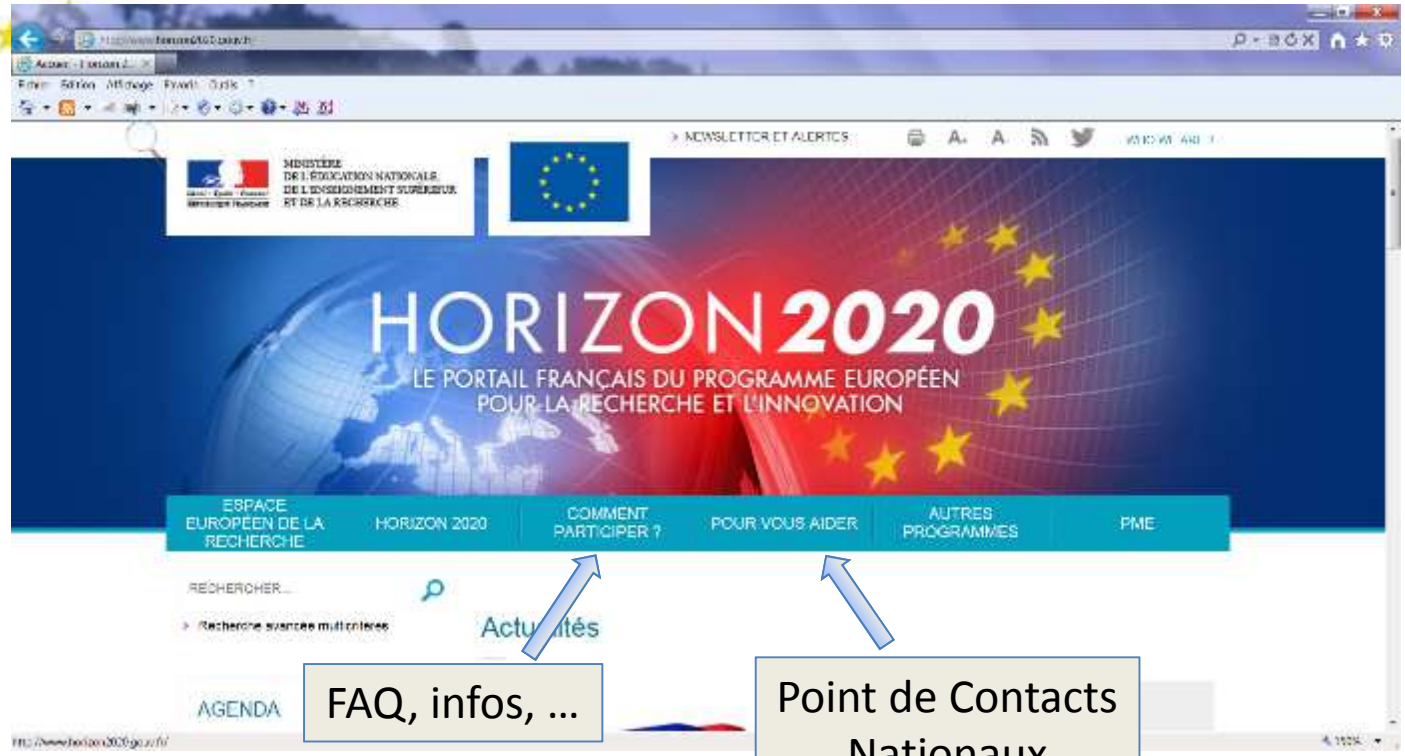
- +500 membres



Membres du PCN NMBP



Un site national



http://www.horizon2020.gouv.fr

Where to get advice and support ?

National Contact Points in your country http://europa.eu/!ub88vC (NMP)

National Contact Points Project website - webinars, presentations, guidance: http://www.nmpteam.eu/

Research Enquiry Service: http://ec.europa.eu/research/index.cfm?pg=enquiries

Further information

Horizon 2020: http://ec.europa.eu/research/horizon2020/index_en.cfm

Key Enabling Technologies, R&I website : http://ec.europa.eu/research/industrial_technologies/index_en.cfm

Participant Portal - Funding Opportunities and support services :
http://ec.europa.eu/research/participants/portal/desktop/en/home.html

CORDIS database with EU funded research projects : http://cordis.europa.eu/projects/home_en.html

Twitter : @EU_H2020 - #H2020 - @EUScienceInnov - #EUIndustryDay - #InvestEUResearch

European Commission

À ne pas manquer

- Ambition Europe 3 (18/11/2019 ; Lyon)
  - Multi-thématiques
  - Ateliers thématiques : décodage des appels, montage de projets, …
  - Réseautage : RdV B2B + Conseils des soutiens locaux et PCN

- Brokerages européens
  - Environnement (16/17/09/2019, Bruxelles)
  - ICT (19-20/09/2019 ; Helsinki)
  - Transport (à venir)

Merci pour votre attention

Informations complémentaires

- **Business case**
  - demonstrate how results of the proposal will enhance :

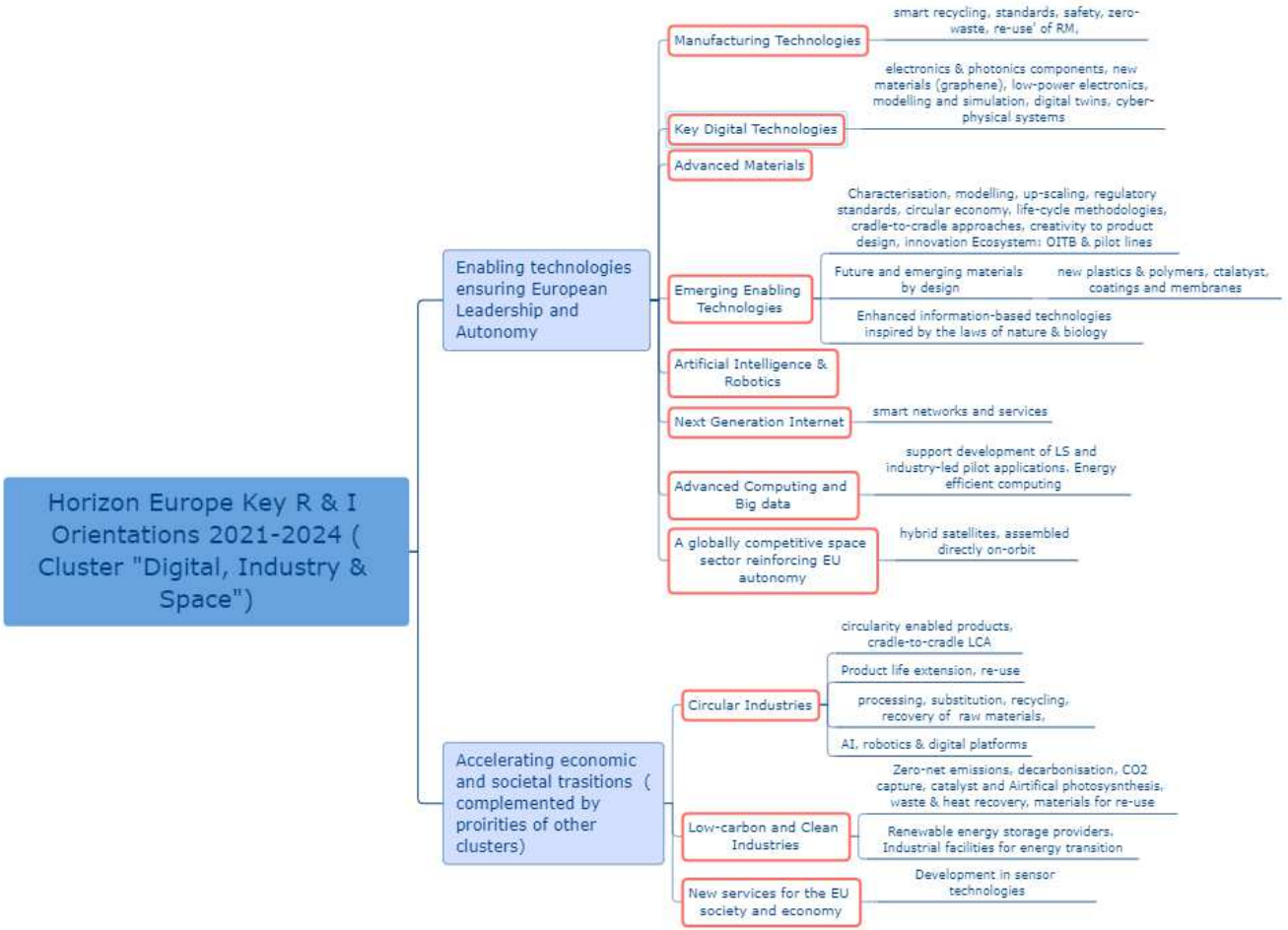
    market opportunities / manufacturing capacities (growth and jobs, short/medium term)
  - Describe the targeted market(s) (size, user/customer needs, position and competitive advantage)
  - And how the solutions will match in a cost - effective manner

- **Exploitation strategy**
  - identify obstacles, requirements, necessary actions for reaching higher TRLs

  e.g. Improved material/product robustness and reliability ; Standardisation;

L'échelle TRL
Technology readiness Levels

- TRL 1: basic principles observed
- TRL 2: technology concept formulated
- TRL 3: experimental proof of concept
- TRL 4: technology validated in lab
- TRL 5: technology validated in relevant environment
- TRL 6: technology demonstrated in relevant environment
- TRL 7: system prototype demonstration in operational environment
- TRL 8: system complete and qualified
- TRL 9: actual system proven in operational environment


Horizon Europe Key R & I Orientations 2021-2024 (Cluster "Digital, Industry & Space")
Enabling technologies ensuring European Leadership and Autonomy
Manufacturing Technologies
smart recycling, standards, safety, zero-waste, re-use' of RM,
Key Digital Technologies
electronics & photonics components, new materials (graphene), low-power electronics, modelling and simulation, digital twins, cyber-physical systems
Advanced Materials
Characterisation, modelling, up-scaling, regulatory standards, circular economy, life-cycle methodologies, cradle-to-cradle approaches, creativity to product design, innovation Ecosystem: OITB & pilot lines
Emerging Enabling Technologies
Future and emerging materials by design
new plastics & polymers, ctalatyst, coatings and membranes
Enhanced information-based technologies inspired by the laws of nature & biology
Artificial Intelligence & Robotics
Next Generation Internet
smart networks and services
Advanced Computing and Big data
support development of LS and industry-led pilot applications. Energy efficient computing
A globally competitive space sector reinforcing EU autonomy
hybrid satellites, assembled directly on-orbit
Accelerating economic and societal trasitions (complemented by proirities of other clusters)
Circular Industries
circularity enabled products, cradle-to-cradle LCA
Product life extension, re-use
processing, substitution, recycling, recovery of raw materials,
AI, robotics & digital platforms
Low-carbon and Clean Industries
Zero-net emissions, decarbonisation, CO2 capture, catalyst and Airtifical photosysnthesis, waste & heat recovery, materials for re-use
Renewable energy storage providers, Industrial facilities for energy transition
New services for the EU society and economy
Development in sensor technologies