# **India National Guidelines**

# EU-India Water Cooperation on Research and Innovation Joint Call for Proposals - 2017- 2018

The EU-India S&T Agreement aims to support excellent research on priority areas which can best be addressed by a multinational approach. This initiative should facilitate cooperation among the researchers and institutions in India and Europe in the field of water.

# 1. Funding Agencies

#### • EUROPEAN UNION

o European Commission – Horizon 2020

#### • INDIA

- o Indian Department of Science and Technology (DST)
- Indian Department of Biotechnology (DBT)

# 2. Scope

This action should develop new and/or adapt the most suitable existing innovative and affordable solutions for Indian conditions, both in urban and rural areas, by addressing one or more of the following broad challenges:

- (i) Drinking water purification with a focus on emerging pollutants;
- (ii) Waste water treatment, with scope for resource/energy recovery, reuse, recycle and rainwater harvesting, including bioremediation technologies;
- (iii) Real time monitoring and control systems in distribution and treatment systems.

The centre of gravity of the actions is expected at TRL 3-6. The detailed Call text is annexed at the end of this document.

The complete call information is available on websites of:

# • European Commission Participant Portal

http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc5-12-2018.html

# • Department of Science & Technology (DST):

http://www.dst.gov.in/, http://onlinedst.gov.in/Login.aspx

 Department of Biotechnology (DBT): http://www.dbtindia.nic.in/

# 3. Participation

Joint proposal for a collaborative research and innovation project (called RIA - Research and Innovation Action<sup>1</sup>) should be submitted by a consortium of at least three legal entities from India and three legal entities from Europe.

The eligibility criteria and other terms and conditions are described below.

Above the minimum required number of participants (3+3), the consortium can have as many participants as deemed necessary and in the interest of executing the project.

# 3.1 Eligibility

# o European Union:

Are eligible to receive funding in Horizon 2020:

- Member States of the European Union, including their overseas departments and outermost regions<sup>2 3 4</sup>.
- Countries Associated to Horizon 2020<sup>5</sup>;

Jointly called hereafter 'Europe'.

At least three legal entities from Europe shall participate in an action. Each of the three legal European entities shall be established in a different Member State or country associated to Horizon 2020.

All three legal entities shall be independent of each other within the meaning of Article 8 of Horizon 2020 Rules for Participation.

#### o India:

At least three different legal entities from India. All legal entities shall be independent of each other.

<sup>&</sup>lt;sup>1</sup> http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016\_2017/annexes/h2020-wp1617-annex-d-ria\_en.pdf

<sup>&</sup>lt;sup>2</sup> https://europa.eu/european-union/about-eu/countries en

http://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2018-2020/annexes/h2020-wp1820-annex-a-countries-rules\_en.pdf

<sup>&</sup>lt;sup>4</sup> For British applicants: Please note that until the UK leaves the EU, EU law continues to apply to and within the UK, when it comes to rights and obligations; this includes the eligibility of UK legal entities to fully participate and receive funding in Horizon 2020 actions. Please be aware however that the eligibility criteria must be complied with for the entire duration of the grant. If the United Kingdom withdraws from the EU during the grant period without concluding an agreement with the EU ensuring in particular that British applicants continue to be eligible, you will cease to be eligible to receive EU funding (while continuing, where possible, to participate) or be required to leave the project on the basis of Article 50 of the grant agreement.

<sup>&</sup>lt;sup>5</sup> http://ec.europa.eu/research/participants/data/ref/h2020/grants\_manual/hi/3cpart/h2020-hi-list-ac\_en.pdf

# 3.2 Type of eligible applicants

#### From India:

Eligible Indian partners can be from recognised public/private funded academic or research institutions, national R&D laboratories, R&D entities having recognition as a Scientific and Industrial Research Organisation (SIRO)<sup>6</sup> by the Department of Scientific and Industrial Research (DSIR)<sup>7</sup> under the Scheme on Recognition of Scientific and Industrial Research Organisations (SIROs) of 1988.

The Indian private R&D institutions, Indian NGOs/VOs should be registered in the DARPAN Portal of NITI Aayog (<a href="http://ngodarpan.gov.in/">http://ngodarpan.gov.in/</a>) and registered in the Government of India's Public Finance Management System (PFMS) - <a href="https://pfms.nic.in">https://pfms.nic.in</a>. The Indian private R&D performing institutions, Indian NGOs/VOs should have experience of at least 3 years in scientific research, teaching, training, extension activities.

**Indian SME/Industry**: Indian SME/Industry can be partner in the consortium and eligible for funding subject to fulfilment of DST/DBT financial and technical norms.

As per existing DBT financial norm, maximum grant support to industry will be Rs.1.5 Crores per project, subject to matching contribution from industry. Company should be incorporated in India and should have 51% Indian corpus i.e. shareholding. This is particular relevant for the private SMS/industry on Bioremediation.

# From Europe:

Any natural or legal person (e.g. any company, big or small, research organisations, universities, non-governmental organisations, etc.) regardless of their place of residence or establishment. in Europe. They must possess the operational and financial viability to carry out the research tasks that they propose<sup>8</sup>.

# 3.3 Composition of the consortia

- Collaborative Research & Innovation Actions (RIA) will be carried out by consortia
  of organisations working together on specific research & innovation areas identified
  in the call text.
- Each consortium submitting a proposal must include at least three legal R&D entities from India, and at least three legal entities from Europe.

<sup>&</sup>lt;sup>6</sup> http://www.dsir.gov.in/#files/tpdup/irdpp/SIRO-revised-guidelines.html

<sup>&</sup>lt;sup>7</sup> The Department of Scientific and Industrial Research (DSIR), Government of India is the nodal government department for granting recognition to non-commercial Scientific & Industrial Research Organisations (SIROs). The functional SIROs having clearly stated objectives of undertaking scientific research, broad based Governing Council, Research Advisory Committee, research personnel, infrastructure facilities for research, well defined, time bound research programs and clearly stated objectives of undertaking scientific research are considered eligible for recognition by DSIR.

<sup>&</sup>lt;sup>8</sup> http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/applying-for-funding/find-partners en.htm

- In addition to the six mandatory participants, the consortia may involve as many partners as necessary.
- There is no restriction on additional number of participating organizations from India and Europe.
- The number of project partners should correspond to the aims of the project and be reasonably balanced in terms of geographic participation. Each project should clearly demonstrate the added value of working together.
- The participating organization from India/Europe countries has to be a legal entity as per law of the country.
- There is one call coordinator per consortium. In addition, a 'lead scientific coordinator' to represent the Indian participants in each consortium should be nominated.
- The proposals have to be led by qualified researchers/ professionals from Science, Technology, and Engineering disciplines working in regular position at Indian & European institutions.
- Gender balance in research teams: Applicants are encouraged to promote equal
  opportunities in the implementation of the action and to ensure a balanced
  participation of women and men at all levels in research and innovation teams and
  in management structures. Integrate gender/sex analysis in research and innovation
  (R&I) content.

# 3.4 Overall amount of funding per consortia

Proposals requesting an overall contribution (including both EU and India funding) of between EUR 3 million and EUR 5 million for project duration of 3 to 5 years will be supported under this Call.

# 4. Funding Support

# • European Side:

✓ Direct and Indirect costs as per the Horizon 2020 rules of participation for the Research and Innovation Actions (RIA).

## • Indian Side:

- ✓ Direct costs: manpower (JRF, SRF, RA, TA etc.), consumables, travel cost (domestic and international), fieldwork, laboratory equipment, demonstration plant including construction, civil/electrical/mechanical works and contingency, training and awareness.
- ✓ Indirect costs overhead charges: as per DST and DBT norms.

# Indian participant MUST submit additional detailed financial plan in Part B of the Horizon 2020 Application form, according to the format hereunder:

# **Budget format**

**Name of the Investigator:** 

Name of the Institution:				
Type of Organisation:				
Head	Year 1	Year 2	Year 3	Total
A. Non-recurring		l		
1. Lab Equipment				
2. Demonstration Plant Cost				
Total A				
B. Recurring		l		
1. Consumables				
2. Manpower JRF, SRF, RA, TA				
3. Travel				
a. Domestic (including field work)				
b. International travel				
c. Local hospitality for visiting scientist.				
4. Training and Awareness				
5. Review meeting:				
6. Contingency				
7. Outsourcing				
8. Other expenses (Specify)				
9. Indirect cost (Overheads) – as per DST/				
DBT norms				
TOTAL B (1+2+3+4+5+6+7+8+9)				
TOTAL (A+B)				

Important notice: this budget table should be made for each Indian participating/applicant partner. Details and Justification should be provided for each head.

#### 5. **Process for submission of Joint Project Proposals**

#### 5.1 Submission of proposal on Horizon 2020 Participant Portal<sup>9</sup>

Joint Proposals must be submitted by the Call Coordinator on-line via the Electronic Submission Service of the Participant Portal of Horizon 2020.

Proposals must be submitted electronically using the electronic submission system of the Horizon 2020 Participant Portal. Access to the electronic submission system is available after selecting a topic and a type of action of a call. Click here to start submission http://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/sc5-12-2018.html

Proposals must be created and submitted by a representative/contact person of the coordinating organisation. The electronic submission system is an online wizard that guides you step-by-step through the preparation of your proposal. The proposal itself consists of 2 main parts: PART A relating to administrative forms (structured information of the basic administrative data, declarations of partners, organisations and contact persons, etc...) and PART B containing the technical specifications, the detailed description of the planned research and innovation project; outlining work packages, budget and costs, etc..

Further mandatory or optional annexes (e.g. supporting documents for ethics issues) can be required by the call and the given topic, as shown in the submission system.

To be able to use the Participant Portal Submission Service, it's mandatory that you register yourself through the European Commission Authentication Service (ECAS) in order Participant to access the IT the Portal [https://webgate.ec.europa.eu/cas/eim/external/register.cgi]

If you want to participate in a project proposal, your organisation needs to be registered in the Beneficiary Register of the Participant Portal and have a 9-digit Participant Identification Code (PIC)<sup>10</sup>.

You can verify whether your organisation is already registered and has a PIC on the Participant Portal 'Beneficiary Register' page. If not, you can start the registration process on the same page and, once completed, get the PIC to be quoted in your proposal and in any correspondence with the Commission.

5.2 Submission of joint proposals to India (both to DST and DBT).

# Online submission:

1 pdf file and 1 Doc file of the final joint proposal (PART A and Part B) which has been submitted on the Horizon 2020 Participant Portal, should be uploaded online by the

http://ec.europa.eu/research/participants/docs/h2020-funding-guide/grants/applying-for-funding/submitproposals en.htm

10 http://ec.europa.eu/research/participants/portal/desktop/en/organisations/register.html

nominated 'Lead Indian Scientific Coordinator', on the DST portal: <a href="https://www.onlinedst.gov.in">www.onlinedst.gov.in</a>, through DST's Electronic Project Management System (e-PMS) along with the necessary documents.

DST will dispatch the submitted consortia on line to DBT.

In addition, a hard copy is also requested (see hereunder) to both DST and DBT.

## **Instructions for uploading proposal to DST on e-PMS**

- I. Log on <u>onlinedst.gov.in</u> to access the home page of the "DST e-PMS Portal", register, log in and submit the joint project proposal in prescribed Format.
- II. Before filling up the form candidates are advised to carefully go through the Relevant Advertisement published at the DST Website (www.dst.gov.in) and also available under Proposal Formats in the e-PMS Portal after logging in the portal site.
- III. To save your time and avoid data loss, please download the appropriate proposal format and fill all the information required as per the format as a Word and PDF file and then keep it ready for upload during submission of mandatory documents.
- IV. Click on "Submit proposals" link which would take you to a page seeking multiple information starting with General information, Principal investigator etc.:

Important: for EU-India proposal, you do **not need to fill in the part related to "Suggested referees and Current Ongoing Project**. In other words, only the mandatory information sought against each menu has not to be filled it and thus not "Suggested referees and Current Ongoing Project".

- V. After filling all above particulars, there is provision for preview your details before final submission of application form on clicking on "Preview" button. Preview page will display all facts/particulars that you have mentioned on entry time if you are sure with filled details then click on "Submit" button to finally push data into server.
- VI. Candidates are advised to carefully fill and verify the details filled in the online application themselves as no change will be possible/ entertained after clicking the FINAL SUBMIT BUTTON.

#### LAST DATE FOR RECEIPT OF APPLICATIONS:

The joint proposal must be submitted by 27<sup>th</sup> February 2018 (17:00 CET and 23:59 IST) after which the web-link will be AUTOMATICALLY disabled FOR ANY USAGE.

Submission of hard copy: a hard copy of the version submitted online to the Horizon 2020 Participant Portal, should be submitted to **both DST and DBT** by 12<sup>th</sup> March 2018 at the latest, to the following postal address by SPPED POST only:

# **Department of Science and Technology**

Dr. Arvind Kumar Scientist 'E' Room No. 14 D Technology Bhavan

Department of Science and Technology New Mehrauli Road, New Delhi -110016 Email: sanjay.kalia@nic.in

Email: arvind.kumar71@nic.in

# **Department of Biotechnology**

Dr. Sanjay Kalia, Scientist E

**International Cooperation** 

Department of Biotechnology (DBT)

CGO Complex, Lodhi Road

New Delhi - 110 003

# List of documents required for online submission DST e-PMS

The followings documents may be prepared by Indian PI and uploaded on the DST Portalwww.onlinedst.gov.in . The requisite format is listed below.

- Biodata (max size 512KB) a)
- b) Certificate from Investigator(s) (max size 512KB)
- Endorsement from the Head of Institution (on letter head) (max size 512KB) c)
- d) Conflict of Interest (max Size 512KB)
- Complete Proposal (1 pdf file and 1 Doc file) as indicated in online e) portal(max size 2 MB)

# **Endorsement from the Head of Institution**

(To be given on letter head)

Project T	itle:
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1.	Certified that the Institute welcomes participation of Dr as the Principal Investigator and Dr as the Principal Co-Investigator for the project and that in the unforeseen event of discontinuance by the Principal Investigator, the Principal Co-Investigator will assume the responsibility of the fruitful completion of the project (with due information to funding agency).
2.	Certified that the equipment and other basic facilities and such other administrative facilities as per terms and conditions of the grant, will be extended to the investigator(s) throughout the duration of the project.
3.	Institute assumes to undertake the financial and other management responsibilities of the project.
	Date:
	Name and Signature of Head of Institution
	Place:

# **Certificate from the Investigator**

# **Project Title:**

- 1. I/ We agree to abide by the terms and conditions of the DST/DBT research grant.
- 2. I/ We did not submit the project proposal elsewhere for financial support.
- 3. I/ We have explored and ensured that equipment and basic facilities will actually be available as and when required for the purpose of the projects. I/We shall not request financial support under this project, for procurement of these items.
- 4. I/ We undertake that spare time on permanent equipment made available to other users.
- 5. I/We have enclosed the following documents uploaded online portal.
  - a) Biodata of all Lead PIs.
  - b) Certificate from Investigator(s)
  - c) Endorsement from the Head of Institution (on letter head)
  - d) Conflict of Interest
  - e) Complete Proposal (1pdf file and 1Doc file)

Name of PI and Signature	
Date:	
Place:	

# **DEPARTMENT OF SCIENCE AND TECHNOLOGY**

# POLICY ON CONFLICT OF INTEREST

# FOR REVIEWER & COMMITTEE MEMBER or APPLICANT or DST OFFICER ASSOCIATED/ DEALING WITH THE SCHEME/ PROGRAM OF DST

Issues of Conflicts of Interest and ethics in scientific research and research management have assumed greater prominence, given the larger share of Government funding in the country's R & D scenario. The following policy pertaining to general aspects of Conflicts of Interest and code of ethics, are objective measures that is intended to protect the integrity of the decision making processes and minimize biasness. The policy aims to sustain transparency, increase accountability in funding mechanisms and provide assurance to the general public that processes followed in award of grants are fair and non-discriminatory. The Policy aims to avoid all forms of bias by following a system that is fair, transparent and free from all influence/ unprejudiced dealings, prior to, during and subsequent to the currency of the programme to be entered into with a view to enable public to abstain from bribing or any corrupt practice in order to secure the award by providing assurance to them that their competitors will also refrain from bribing and other corrupt practice and the decision makers will commit to prevent corruption, in any form, by their officials by following transparent procedures. This will also ensure a global acceptance of the decision making process adopted by DST.

# **Definition of Conflict of Interest:**

Conflict of Interest means "any interest which could significantly prejudice an individual's objectivity in the decision making process, thereby creating an unfair competitive advantage for the individual or to the organization which he/she represents". The Conflict of Interest also encompasses situations where an individual, in contravention to the accepted norms and ethics, could exploit his/her obligatory duties for personal benefits.

# 1. Coverage of the Policy:

- a) The provisions of the policy shall be followed by persons applying for and receiving funding from DST, Reviewers of the proposal and Members of Expert Committees and Programme Advisory Committees. The provisions of the policy will also be applicable on all individuals including Officers of DST connected directly or indirectly or through intermediaries and Committees involved in evaluation of proposals and subsequent decision making process.
- b) This policy aims to minimize aspects that may constitute actual Conflict of Interests, apparent Conflict of Interests and potential Conflict of Interests in the funding mechanisms that are presently being operated by DST. The policy also aims to cover, although not limited to, Conflict of interests that are Financial (gains from the outcomes of the proposal or award), Personal (association of relative / Family members) and Institutional (Colleagues, Collaborators, Employer, persons associated in a professional career of an individual such as Ph.D. supervisor etc.)

# 2. Specifications as to what constitutes Conflict of Interest.

Any of the following specifications (non-exhaustive list) imply Conflict of Interest if,

- (i) Due to any reason by which the Reviewer/Committee Member cannot deliver fair and objective assessment of the proposal.
- (ii) The applicant is a directly relative# or family member (including but not limited to spouse, child, sibling, parent) or personal friend of the individual involved in the decision making process or alternatively, if any relative of an Officer directly involved in any decision making process / has influenced interest/ stake in the applicant's form etc.
- (iii) The applicant for the grant/award is an employee or employer of an individual involved in the process as a Reviewer or Committee Member; or if the applicant to the grant/award has had an employer-employee relationship in the past three years with that individual.
- (iv) The applicant to the grant/award belongs to the same Department as that of the Reviewer/Committee Member.
- (v) The Reviewer/Committee Member is a Head of an Organization from where the applicant is employed.
- (vi) The Reviewer /Committee Member is or was, associated in the professional career of the applicant (such as Ph.D. supervisor, Mentor, present Collaborator etc.)
- (vii) The Reviewer/Committee Member is involved in the preparation of the research proposal submitted by the applicant.
- (viii) The applicant has joint research publications with the Reviewer/Committee Member in the last three years.
- (ix) The applicant/Reviewer/Committee Member, in contravention to the accepted norms and ethics followed in scientific research has a direct/indirect financial interest in the outcomes of the proposal.
- (x) The Reviewer/Committee Member stands to gain personally should the submitted proposal be accepted or rejected.

# The Term "Relative" for this purpose would be referred in section 6 of Companies Act, 1956.

# 3. **Regulation**:

The DST shall strive to avoid conflict of interest in its funding mechanisms to the maximum extent possible. Self-regulatory mode is however recommended for stake holders involved in scientific research and research management, on issues pertaining to Conflict of Interest and scientific ethics. Any disclosure pertaining to the same must be made voluntarily by the applicant/Reviewer/Committee Member.

# 4. Confidentiality:

The Reviewers and the Members of the Committee shall safeguard the confidentiality of all discussions and decisions taken during the process and shall refrain from discussing the same with any applicant or a third party, unless the Committee recommends otherwise and records for doing so.

# 5. Code of Conduct

# 5.1 To be followed by Reviewers/Committee Members:

- (a) All reviewers shall submit a conflict of interest statement, declaring the presence or absence of any form of conflict of interest.
- (b) The reviewers shall refrain from evaluating the proposals if the conflict of interest is established or if it is apparent.
- (c) All discussions and decisions pertaining to conflict of interest shall be recorded in the minutes of the meeting.
- (d) The Chairman of the Committee shall decide on all aspects pertaining to conflict of interests.
- (e) The Chairman of the Committee shall request that all members disclose if they have any conflict of interest in the items of the agenda scheduled for discussion.
- (f) The Committee Members shall refrain from participating in the decision making process and leave the room with respect to the specific item where the conflict of interest is established or is apparent.
- (g) If the Chairman himself/herself has conflict of interest, the Committee may choose a Chairman from among the remaining members, and the decision shall be made in consultation with Member Secretary of the Committee.
- (h) It is expected that a Committee member including the Chair-person will not seek funding from a Committee in which he/she is a member. If any member applies for grant, such proposals will be evaluated separately outside the Committee in which he/she is a member.

# 5.2 <u>To be followed by the Applicant to the Grant/Award:</u>

- (a) The applicant must refrain from suggesting referees with potential Conflict of Interest that may arise due to the factors mentioned in the specifications described above in Point No. 2.
- (b) The applicant may mention the names of individuals to whom the submitted proposal should not be sent for refereeing, clearly indicating the reasons for the same.

# 5.3 To be followed by the Officers dealing with Programs in DST:

While it is mandatory for the program officers to maintain confidentiality as detailed in point no. 6 above, they should declare, in advance, if they are dealing with grant applications of a relative or family member (including but not limited to spouse, child, sibling, parent) or thesis/ post-doctoral mentor or stands to benefit financially if the applicant proposal is funded. In such cases, DST will allot the grant applications to the other program officer.

#### 6. Sanction for violation

# 6.1 For a) Reviewers / Committee Members and b) Applicant

Any breach of the code of conduct will invite action as decided by the Committee.

# 6.2 For Officers dealing with Program in DST

Any breach of the code of conduct will invite action under present provision of CCS (conduct Rules), 1964.

# **6.3 Final Appellate authority:**

Secretary, DST shall be the appellate authority in issues pertaining to conflict of interest and issues concerning the decision making process. The decision of Secretary, DST in these issues shall be final and binding.

#### 7. Declaration

I have read the above "Policy on Conflict of Interest" of the DST applicable to the Reviewer/ Committee Member/ Applicant/ DST Scheme or Program Officer # and agree to abide by provisions thereof.

I hereby declare that I have no conflict of interest of any form pertaining to the proposed grant \*

I hereby declare that I have conflict of interest of any form pertaining to the proposed grant \*

\* & # (Tick whichever is applicable)

# Name of the Reviewer/ Committee Member or Applicant or DST Officer

(Strike out whichever is not applicable)

#### **ANNEX**

#### **Call Text**

# SC5-12-2018: EU-India water co-operation

Specific Challenge: In recent years, India and Europe have collaborated extensively to enhance and enrich each other's technological and scientific knowledge and management capacities to cope with increasing stress on water resources. Increasing heterogeneity in the uneven distribution of water resources triggered by climate change, extreme water-related events (floods and droughts) and increasing demand due to population growth and economic development add additional stress to water, environment and food security and to the national economy. Many of these water challenges are common to India and some of the EU Member States. Therefore there is a need for a concerted effort of India and EU to address these issues. This will also help in achieving the Sustainable Development Goals' (SDGs) agenda on water.

Scope: This action should develop new and/or adapt the most suitable existing innovative and affordable solutions for Indian conditions, both in urban and rural areas, addressing one or more of the following broad challenges:

- drinking water purification with a focus on emerging pollutants;
- waste water treatment, with scope for resource/energy recovery, reuse, recycle and rainwater harvesting, including bioremediation technologies;
- real time monitoring and control systems in distribution and treatment systems.

Actions should therefore take into account India's water challenges both with regard to quantity and quality. In doing so, allocation of water should be facilitated and the supply should become more competitive or lead to an optimisation of costs; it should also lead to better water management and quality by finding solutions to the treatment of widely varying pollution loads including those from emerging pollutants. The impact of extreme climate and hydrological conditions (monsoon floods) also need to be taken into consideration.

Actions addressing wastewater treatment should focus on sustainable use/reuse of water in rapidly expanding urban areas, as well as smaller cities lacking any type of suitable wastewater treatment. Actions may also address the development of appropriate decentralised water treatment and wastewater treatment and recycling systems, including the improvement of sewage collection and urban drainage systems. Water and energy efficient and cost-effective processes, optimising use and maximising energy and materials recovery from wastewater treatment, reliable monitoring schemes to ensure safe water use and reuse, and simple and affordable operation and maintenance methods also need to be considered.

Actions focusing on drinking water purification should address multiple contaminants or focus on the identification and removal of specific classes of pollutants (e.g. pesticides, fertilisers, geogenic contaminants, etc.).

In actions on wastewater treatment and drinking water purification, the design, development and deployment of sensors and decision support systems for real time monitoring and control of water quantity and quality, should be considered.

In all cases, the involvement of relevant stakeholders, including industry partners, local authorities, water users, research centres and social communities, and consideration of possible gender differences in the use and need of water, is essential in order to enable a strong demonstration component involving transfer of European knowledge, expertise and technology to facilitate future in-house replication. Understanding and assessing the impacts of the developed innovative solutions to the society, in particular for the vulnerable societal groups, should be duly considered. Moreover, in addressing water allocation, the governance of water management and the efficiency of water use, especially for irrigation which is the largest water consumer, should be considered. Actions may also choose to address a combination of the above challenges at river basin scale and should capitalise on knowledge acquired in the projects supported by the joint coordinated EU-India call on water under FP7. Activities are expected to focus on Technology Readiness Levels (TRL) 3 to 6.

In line with the strategy for EU international cooperation in research and innovation (COM(2012) 497), international cooperation is encouraged, in particular with the EU's strategic partners – which India is, as confirmed at the EU-India Summit on 30 March 2016. Actions should include Indian partners in a balanced way. This call should also contribute to the objective stated in the Memorandum of Understanding on water cooperation between India and the EU adopted on 7 October 2016<sup>11</sup> aiming at strengthening the technological, scientific and management capabilities of India and the EU in the field of water.

Proposals should pay attention to the special call conditions for this topic. Both the Indian Department of Science and Technology (DST) and the Department of Biotechnology (DBT) within Indian Ministry of Science and Technology, are committed to co-fund the Indian entities and thus Indian participants will not be eligible for EU funding. This call text will also be available on the websites of DST and DBT respectively and it will refer to the agreed Co-Funding Mechanism (CFM)<sup>12</sup> between the EC and DST and DBT. Proposals are to be developed jointly with the Indian entities. For funding purposes, the Indian entities must Horizon 2020 - Work Programme 2018-2020 Climate action, environment, resource efficiency and raw materials submit the proposal to DST and/or DBT. Evaluation will be done jointly according to the conditions specified in the CFM and respecting the EC peer review rules.

The Commission considers that proposals requesting an overall contribution (including both EU and India funding) of between EUR 3 million and EUR 5 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts. The funding support for

<sup>&</sup>lt;sup>11</sup> https://ec.europa.eu/commission/commissioners/2014-2019/vella/announcements/memorandum-understanding-between-republic-india-and-european-union-water-cooperation en

<sup>12</sup> http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020\_localsupp\_india\_en.pdf

the Indian entities will be according to the DST and/or DBT funding guidelines.

Expected Impact: The project results are expected to contribute to:

- improved and efficient wastewater treatment systems, combined with recovery and reuse of energy, substances and treated water;
- improved novel drinking water purification technologies for safe drinking water with easy access at affordable cost both in rural and urban regions;
- improved smart and comprehensive solutions for both quality and quantity monitoring and management of water resources;
- strengthening the Sustainable Development Goals' (SDGs) agenda on water;
- boosting initiatives like the Ganga Rejuvenation Initiative<sup>13</sup>, fostering the emergence of quick—win business, affordable, innovative solutions based on integrated Indian and EU best practices;
- creating a level playing field for European and Indian industries and SMEs working
  in this area, paving the way for a potential joint venture for manufacturing of water
  treatment technologies and systems.

Type of Action: Research and Innovation action

Opening date(s), deadline(s), indicative budget(s)

	7 November 2017
Opening on	00:00 (Brussels local time)
	3:30 am (Indian Time)
	27 February 2018
Deadline for proposal submission	17:00 (Brussels local time)
	23:59 (Indian Time)

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<sup>13</sup> http://nmcg.nic.in/