

## 2018 China National High-Tech R&D Program

### 1. 大气污染成因与控制技术研究 (Research on the cause and control technology of air pollution)

根据本专项实施方案，组织开展监测预报预警技术、雾霾和光化学烟雾形成机制、污染源全过程控制技术、大气污染对人群健康的影响、空气质量改善管理支持技术和大气污染联防联控技术示范等 6 项重点任务科研攻关。

本专项以项目为单元组织申报，项目执行期 3 年。2018 年拟支持项目不超过 15 个。国拨经费约 3 亿元。

This program includes 6 research directions, which are the monitoring and forecasting technology for air pollution, the mechanism of haze and photochemical smog, the whole process and control technology of pollution sources, air pollution effects on human health, the supportive administration system for the improvement of air quality, joint prevention and control technology for air pollution.

15 key research projects will be launched. Period: 2018-2020, Total Grants: 300million (Currency: CNY).

### 2. 水资源高效开发利用 (High efficient development and utilization of water resources)

本专项重点开展综合节水、非常规水资源开发利用、水资源优化配置、重大水利工程建设与安全运行、江河治理与水沙调控、水资源精细化管理等方面科学技术研究。本专项以项目为单元组织申报，项目执行期 3 年。2018 年拟支持不超过 20 个项目，国拨经费约 3.2 亿元。

This program includes 6 technology directions, which are integrated water saving technologies, development and utilization of inconvenient water resources, utilized configuration of water resources, water conservancy projects construction and safe operation, river harness and river sand control, requirements for the safety supply of water resources, delicacy management of water resources

20 key research projects will be launched. Period: 2018-2020, Total Grants: 320million (Currency: CNY).

### 3. 典型脆弱生态修复与保护研究 (Restoration and protection for the typical fragile ecology)

本专项重点支持生态监测预警、荒漠化防治、水土流失治理、石漠化治理、退化草地修复、生物多样性保护等技术模式研发与典型示范。

本专项要求以项目为单元组织申报，项目执行期 3 年。2018 年拟安排不超过 7 个项目，国拨经费约 6500 万。

This program would develop 6 technology directions, which are the monitoring and forecasting system for ecology, the prevention and control of desertification, the prevention of soil erosion, the prevention of stony desertification, degraded grassland repair and the biodiversity protection .

7 key research projects will be launched. Period: 2018-2020, Total Grants: 65million (Currency: CNY).

#### 4. 深地资源勘查开采 (Prospecting and development of deep mineral resources)

本重点专项重点支持大深度立体探测技术装备与深部找矿示范，深部矿产资源勘查增储应用示范，深部矿产资源开采理论与技术。

本专项以项目为单元组织申报，项目执行期为 3 年。2018 年拟支持 16 个项目，国拨经费概算约 4.8 亿元。

This program would develop 3 technology directions, which are large depth stereo detection technology and equipment for prospecting, deep mineral resources exploration and storage applications, mining theory and technology of deep mineral resources.

16key research projects will be launched. Period: 2018-2020, Total Grants: 480million (Currency: CNY).

#### 5. 深海关键技术与装备(Deep-sea key technologies and equipment)

本重点专项重点支持全海深（最大工作深度 11000 米）潜水器研制及深海前沿关键技术攻关，深海通用配套技术及 1000~7000 米级潜水器作业及应用能力示范，深海能源、矿产资源勘探开发共性关键技术研发及应用等研究方向。

本专项以项目为单元组织申报，项目执行期 3 年，2018 年拟针对上述方面继续支持约 40 个项目，国拨经费概算约 6 亿元

This program would develop 3 innovation technology directions, which are whole sea (working depth: 11,000 meters) deep unmanned submersible, deep-sea general ancillary technology and 1,000-7,000 meters submersible operations and applications, key generic technologies for deep-sea resources prospecting.

40 key research projects will be launched. Period: 2018-2020, Total Grants: 600million (Currency: CNY).

## 6. 海洋环境安全保障( **Marine environmental safety**)

重点围绕海洋环境立体观测/监测的新技术研究与系统集成及核心装备国产化、海洋环境变化预测预报技术、海洋环境灾害及突发环境事件预警和应急处置技术、国家海洋环境安全保障平台研发与应用示范四个重点任务。

2018 年拟支持 21 个项目。本专项以项目为单元组织申报，项目执行期 3 年。国拨经费概算约 3.7 亿元。

This program would develop 4 technology directions, which are three-dimensional observation and monitoring technologies of marine environment and home-made key equipment, prediction technology for marine environmental changes, early warning and emergent treatment technology for marine disaster and emergencies, development and application of national marine environment security platform. 21 key research projects will be launched. Period: 2018-2020, Total Grants: 370million (Currency: CNY).

## 7. 公共安全风险防控与应急技术装备( **Public security risks control and technical equipment for emergencies**)

本专项重点围绕公共安全共性基础科学问题、国家公共安全综合保障、社会安全监测预警与控制、生产安全保障与重大事故防控、国家重大基础设施安全保障、城镇公共安全风险防控与治理、综合应急技术装备等重点方向。

2018 年拟支持 37 个项目，本专项以项目为单元组织申报，项目执行期 2-3 年。2018 年度国拨经费总概算约 10 亿元。

This program would develop 7 technology directions, which are common basic science problems of public security, national comprehensive protection of public security, monitoring and control technology for public security, production safety guarantee and severe accident prevention and control, security guarantee for the major national infrastructure, urban public security risk prevention and control, comprehensive technology and equipment for emergencies.

37 key research projects will be launched. Period: 2018-2019 or 2020, Total Grants: 1billion (Currency: CNY).

#### 8. 绿色建筑及建筑工业化( **Green building and industrialization of construction**)

本重点专项聚焦基础数据系统和理论方法、规划设计方法与模式、建筑节能与室内环境保障、绿色建材、绿色高性能生态结构体系、建筑工业化、建筑信息化等 7 个重点方向。

2018 年拟支持 18 个项目，本专项以项目为单元组织申报，项目执行期 3 年。2018 年度国拨经费总概算约 3.2 亿元。

This program would develop 7 technology directions, which are basic data system and theoretical methods, methods and patterns for planning and design, energy-saving building and indoor environment protection, green building materials, Green and high performance ecological system, industrialization of construction, building information modeling.

18 key research projects will be launched. Period: 2016-2020, Total Grants: 320million (Currency: CNY).

#### 9. 生物安全关键技术研发(**Key technologies development for biosecurity**)

本重点专项拟在特殊生物资源监测与溯源技术研究、生物安全四级实验室关键技术及设备研制、森林生态系统重要生物危害因子综合防控关键技术研究、生物安全相关核心计量技术和标准物质研究、生物安全高效应对产品研发技术体系研究部署 5 个指南方向。2018 年拟支持 5 个项目，2018 年度国拨经费总概算约 1.25 亿元。

This program would develop 5 technology directions, which are research on the monitoring and traceability of special biological resources, key technologies and equipment for biosafety level 4 laboratory, core measurement technology and standard material of biosafety, R&D system for efficient products response to biosecurity.

5 key research projects will be launched. Total Grants: 125million (Currency: CNY).

#### 10. 生物医用材料研发与组织器官修复替代(**Biomedical material and organ repair**)

本重点专项部署前沿科学及基础创新、关键核心技术、产品开发、典型示范 4 大研究任务，以及上述研究任务的医用级原材料的研发及产业化、标准和规范研究、临床及临床转化研究 3 项重点任务。

2018 年拟支持 19 个项目，本专项以项目为单元组织申报，项目执行期 3 年。2018 年度国拨经费总概算约 3 亿元。

This program would develop 4 research directions, which are advanced innovation development, key technology, products development and applications for

biomedical materials and organ repair; and industrialization, standard for medical materials.

19 key research projects will be launched. Period: 2018-2020, Total Grants: 300million (Currency: CNY).

#### 11. 数字诊疗装备研发 (Digital diagnostic equipment research)

本重点专项设置了前沿和共性技术创新、重大装备研发、应用解决方案研究、应用示范和评价研究 4 项任务。

2018 年拟支持 24 个项目，本专项以项目为单元组织申报，项目执行期 3 年。2018 年度国拨经费总概算约 2.3 亿元。

This program would develop 4 technology directions, which are technology innovation, key equipment R&D, applications and evaluation research on digital diagnostic equipment.

24 key research projects will be launched. Period: 2018-2020, Total Grants: 230million (Currency: CNY).

#### 12. 重大慢性非传染性疾病防控研究(Chronic NCD prevention and control)

本重点专项 2018 年将在心脑血管疾病、恶性肿瘤、慢阻肺、糖尿病、神经精神疾病防控技术研究、重大慢病综合防控研究、重大慢病支撑平台体系研究及国际合作研究等方向部署 34 个三级指南方向。拟支持项目 36 个，国拨经费约 4.5 亿元，项目执行期 3 年。

This program would develop technology directions against the following diseases, which are cardiac-cerebral vascular disease, cancer, COPD, diabetes, neuropsychiatric diseases prevention and control; and technology directions on comprehensive prevention and control of major chronic diseases, supporting platform system and international collaborations for major chronic diseases.

36 key research projects will be launched. Period: 2018-2020, Total Grants: 450million (Currency: CNY).

#### 13. 生殖健康及重大出生缺陷防控研究(Reproductive health and prevention and control of major birth defects)

本重点专项 2018 年重点支持生殖健康相关疾病临床防治研究、出生缺陷和不孕不育防治技术研发。

2018 年拟支持 4 个项目，本专项以项目为单元组织申报，项目执行期 3 年。2018 年度国拨经费总概算约 0.9 亿元。

This program would develop 3 technology directions, which are clinical research for reproductive health, birth defects and prevention and control technology for infertility.

4 key research projects will be launched. Period: 2018-2020, Total Grants: 90million (Currency: CNY).

#### 14. 精准医学研究 (Precise Medicine)

本重点专项 2018 设置了生命组学技术研发，大规模人群队列研究，精准医学大数据的资源整合、存储、利用与共享平台建设，疾病防诊治方案的精准化研究，精准医学集成应用示范体系建设等 5 个主要任务。

2018 年拟支持 6 个项目，本专项以项目为单元组织申报，项目执行期 3 年。2018 年度国拨经费总概算约 1.3 亿元。

This program would develop 5 technology directions, which are physiome research, large-scale cohort research, big data integration, storage and platform building for precise medicine, precise medicine research for disease prevention and control, applied and integrated platforms for precise medicine.

6 key research projects will be launched. Period: 2018-2020, Total Grants: 130million (Currency: CNY).