FOR REFERENCE ONLY

THE PRIME MINISTER

THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom – Happiness

No. 66/2014/QD-TTg

Hanoi, November 25, 2014

DECISION

APPROVING THE LIST OF HIGH TECHNOLOGIES PRIORITIZED FOR DEVELOPMENT INVESTMENT AND THE LIST OF HI-TECH PRODUCTS ELIGIBLE FOR DEVELOPMENT PROMOTION

Pursuant to the December 25, 2001 Law on Organization of the Government;

Pursuant to the November 13, 2008 Law on High Technologies;

At the proposal of the Minister of Science and Technology,

The Prime Minister promulgates the Decision approving the list of high technologies prioritized for development investment and the list of hi-tech products eligible for development promotion.

Article 1. To approve the list of high technologies prioritized for development investment and the list of hi-tech products eligible for development promotion (promulgated together with this Decision).

Article 2. High technologies and hi-tech products that are not on the lists promulgated together with this Decision but are urgently needed for socio-economic development shall be submitted by the Ministry of Science and Technology, in coordination with related ministries and ministerial-level agencies, to the Prime Minister for consideration and decision.

Article 3. This Decision takes effect on January 15, 2015, and replaces the Prime Minister's Decision No. 49/2010/QD-TTg of July 19, 2010, approving the list of high technologies prioritized for development investment and the list of hi-tech products eligible for development promotion.

Ministers, heads of ministerial-level agencies, heads of government-attached agencies and chairpersons of provincial-level People's Committees shall implement this Decision.

PRIME MINISTER

Nguyen Tan Dung

APPENDIX I

LIST OF HIGH TECHNOLOGIES PRIORITIZED FOR DEVELOPMENT INVESTMENT
(To the Prime Minister s Decision No. 66/2014/QD-TTg of November 25, 2014)

1. Technology for designing and manufacturing integrated microcircuits (IC);

2. Technology for designing and manufacturing high-definition displays;

3. Technology for developing operating systems for computers and mobile equipment, database management systems and base software providing value-added services;

4. Technology for designing and manufacturing embedded systems;

5. Technology for assuring high-level network security and safety and information confidentiality;

6. Artificial intelligence technology;

7. Technology of distributed computing and high-performance computing;

8. Big data and big data processing technology;

9. Next-generation network technology (NGN, LTE-A, IMT-advanced);

10. Technology of virtualization and cloud computing;

11. Second-generation and next-generation digital television technologies;

12. Interactive television and hybrid television technologies;

13. Flexible electronics (FE) technology;

14. Bio-informatics technology;

15. Technology for designing and manufacturing control devices and power electronics converters for power industry and manufacturing mechanical engineering;

16. Technology for converting and storing renewable energy sources;

17. Aviation and space technology;

18. Technology for designing and manufacturing actuators, automatic control and monitoring units for complete equipment systems in oil refineries, power plants, cement plants, chains for

food, pharmaceutical or fertilizer production or agricultural, forest, aquatic and marine product processing, and hydraulic works;

19. Technology for designing and manufacturing new-generation measuring equipment and devices;

20. Robot technology;

21. Computer-aided designing and manufacturing (CAD/CAM/CAE) technology, flexible manufacturing system (FMS) technology, and computer-integrated manufacturing (CIM) technology for manufacturing high-complexity products;

22. Technology for controlling mechanical engineering precision;

23. Technology for designing, manufacturing, installing and launching drilling platforms and extra-long and extra-heavy structures for petroleum industry;

24. New-generation drilling technology for petroleum exploration;

25. Technology for designing and building large-sized ships and ships with complex properties;

26. Technology for designing and manufacturing new-generation agricultural machinery;

27. Technology for designing and manufacturing technical high-precision molds;

28. Technology for designing and manufacturing advanced optical equipment systems;

29. Technology for designing and manufacturing equipment for imaging diagnosis and treatment for medical use, medical instruments using nuclear technology, and automatic fluid injection and transfusion equipment;

30. Technology for working materials with ultrasound, ignition, plasma or laser;

31. Technology for surface treatment and welding in special environments;

32. Low-temperature sterilization technology; technology for treating hazardous medical solid wastes with microwave or plasma;

33. Micro-electromechanical system (MEMS) technology, nano-electromechanical system (NEMS) technology and sensors on new principles;

34. Gene technology to be applied to diagnosis, examination and treatment;

35. Technology for manufacturing or producing recombinant vaccines and recombinant proteins;

36. Stem-cell technology to regenerate tissues and organs;

37. Animal tissue or embryo cell technology; technology for culturing plant cell tissues;

38. Technology for manufacturing or producing mono-clonal antibodies;

39. Genomics, proteomics and metabolomics technologies;

40. Microbiological technology for treatment of environmental pollution;

41. Technology for manufacturing or producing new-generation biologicals for preservation and processing of agricultural, forest and aquatic products and pharmaceutical materials;

42. Technology for manufacturing new-generation pesticides, erogenous agents for aquatic animals and fertilizers up to international standards;

43. Technology for manufacturing semi-conductor, optoelectronics and photonics materials and metamaterials;

44. Technology for manufacturing high-class magnetic materials;

45. Technology for manufacturing special alloys;

46. Technology for 500-kA aluminum electrolysis;

47. Extraction technology for manufacturing super-clean materials on an industrial scale;

48. Technology for manufacturing super-durable, ultra-light and environment-friendly materials or materials for use in harsh environments;

49. Technology for manufacturing high-quality combinant polymer and composite polymer materials which are durable in tropical climate;

50. Technology for manufacturing bio-degradable polymers;

51. Technology for manufacturing high-class and environment-friendly special-use paints;

52. Catalytic and absorbent material technology for recycling oil deposits and waste oil into base oils of API group-II quality (or equivalent) or higher quality;

53. Technology for manufacturing special-use high-class technical rubber for machine building, electricity generation, electronics, security and national defense;

54. Technology for manufacturing high-class technical ceramics for electricity, electronic and machine building industries;

55. Technology for manufacturing special glass fiber and carbon fiber materials;

56. Nano-material technology;

57. Technology for manufacturing materials and products for transplanting in human body;

58. Technology for manufacturing chemicals and biologicals for use in automatic and complete testing systems.

APPENDIX II

LIST OF HI-TECH PRODUCTS ELIGIBLE FOR DEVELOPMENT PROMOTION
(To the Prime Minister S' Decision No. 66/2014/QD-TTg of November 25, 2014)

1. Operating systems for computers and mobile equipment; database management systems; base software providing value-added services;

2. Software assuring high-level network security and safety and information confidentiality;

3. Multi-factor authentication software and solutions;

4. Software for identifying scripts, images, sounds, gestures, movements, thoughts and biometric factors;

5. Software for controlling next-generation network terminal devices. Soft phones and codecs for multi-service assistance on the next-generation network background;

6. Software for systems applying radio frequency identification (RFID) cards;

7. Software for processing bio-medical information;

8. Special-use background software for measurement and control;

9. Software and services to be applied to smart traffic control systems;

10. Service of designing and optimizing telecommunications networks and systems in the national telecommunications infrastructure;

11. Service of integrating cloud-computing systems;

12. Service of integrating Internet IPv6, mobile Internet and new-generation web application systems;

13. Digital automatic data processing and transmission equipment;

14. Large-capacity data storage devices;

15. Smartcards and smartcard readers;

16. RFID cards and RFID card readers;

17. Equipment for identifying scripts, voices, images, gestures, movements, thoughts and biometric factors;

18. Equipment assuring high-level network security and safety and information confidentiality;

19. Smart-house equipment system;

20. Smart control equipment system for net houses and green houses;

21. Smart traffic control system;

22. Next-generation network equipment, software and accessories (NGN, LTE-A, IMT-advanced);

23. New-generation webcams; digital audio frequency amplifiers; digital amplifiers;

24. New-generation smart mobile terminal devices;

25. Receivers, transmitters and inverters for use in the second-generation and next- generation digital television;

26. New-generation indoor/outdoor radio access equipment;

27. Parallel computers, high-performance computers;

28. High-definition displays;

29. New-generation power electronics semi-conductor components;

30. Integrated microcircuits (IC);

31. Sensors and smart actuators;

32. Biological chips and sensors;

33. Flexible electronics (FE) products and circuits;

34. Micro-electromechanical systems (MEMS), nano-electromechanical systems (NEMS) and equipment using these systems;

35. High-performance and high-quality small-sized power motors;

36. Power generation stations with an output of 50 MW or higher;

37. Generators for thermal power plants with an output of 600 MW or higher;

38. Power generation systems powered by wind, solar, tidal, sea wave or geothermal energy;

39. Transformers of 500 kV or higher;

40. Supervisory control and data acquisition (SCADA) system for power grids; digital relay protectors for the power system;

41. Smart solar/wind inverters; heavy-duty and environment-friendly solar power cells;

42. Power electronics converters used for power generation stations powered by renewable energies, smart power transmission, industrial electric drive systems, and large- current electrolytic source units for chemical and ore-sorting industries;

43. Heavy-duty batteries and accumulators; uninterrupted power supply (UPS) units using super-capacitors;

44. Digital measuring and observation equipment and tools;

45. Laser distance meters;

46. Calipers of all kinds with an accuracy of up to 10 micrometers (microns); micrometers of all kinds with high accuracy;

47. Profile projectors;

48. Digital machines and tools for measuring flow and pressure of fluids and gases;

49. Digital equipment and tools for physico-chemical analysis;

50. Digital equipment and tools for gauging viscosity, porosity, elasticity and surface strain;

51. Digital equipment and tools for metering heat, sound volume and light;

52. Digital oscilloscopes, spectral analyzers and radiation meters;

53. Automatic control and supervision units and actuators for complete equipment systems in petrochemical refineries, power plants, rotary cement kilns, chains for food, pharmaceutical or fertilizer production, or agricultural, forest, aquatic and marine product processing, and hydraulic works;

54. Computerized numerically controlling (CNC) units for machine tools and manufacturing machines;

55. Control devices and automatic systems for large gravity load lifting machines;

56. Automated balancing system in ships;

57. Large ship cranes and large gravity load hoists;

58. Large gravity load lifting devices;

59. Self-elevating drilling units, semi-submersible rigs for petroleum exploitation;

60. New-generation high-precision mechanical working central machines;

61. Opened-chain industrial robots, parallel robots with three or more degrees of freedom;

62. Special-use AC servo engines, multi-axial servo gearing systems, decelerator boxes of high precision for robots and CNC machines;

63. Technical high-precision molds;

64. New-generation cultivating, tending, harvest and post-harvest machinery;

65. Systems of equipment for industrial-scale food processing and preservation;

66. Imaging diagnosis equipment;

67. Picture archiving communication systems (PACS);

68. Automatic and complete testing systems;

69. Functional probes;

70. Cancer and cardiovascular disease diagnosis and treatment instruments;

71. Medical laser instruments;

72. Digital micro-surgical instruments;

73. Endoscopic devices for diagnosis and treatment;

74. Automated injection and transfusion equipment;

75. Chemicals and biologicals for automatic and complete testing systems;

76. Materials and products for transplanting in human body;

77. Complex optical microscopes;

78. High-quality lens, prisms, contact lenses;

79. Large-capacity laser machines (except laser diodes);

80. Satellites and satellite equipment;

81. Terminal transmitting and receiving equipment and stations of satellites;

82. Equipment applying global positioning system technology;

83. Aerial vehicles and software for processing data received from aerial vehicles;

84. New key plant varieties and animal breeds for export which are created on the background of cell technology and to be produced on an industrial scale and of high yield, disease-free and high quality;

85. High-quality, disease-free, high-yield and disease-resistant breeds of aquatic animals for industrial-scale production;

86. International-standard microorganism preparations for use in agriculture, preservation and processing of agricultural, forest, aquatic and marine products and environmental treatment;

87. International-standard new-generation fertilizers and plant protection drugs;

88. Plant growth regulators; international-standard new-generation erogenous agents for aquatic animals;

89. Kits for diagnosis of a number of plant and animal diseases;

90. Natural and synthetic hormones and pharmaceuticals containing hormones;

91. Recombinant ADN vaccines and recombinant protein vaccines used for humans, cattle, poultry and aquatic animals;

92. Multivalent vaccines;

93. Substitutive cells, tissues and organs created from stem cells;

94. Kits for diagnosis of diseases and control of food safety for humans;

95. Gene assessment service;

96. Semi-conductor materials for manufacture of integrated microcircuits (IC);

97. Materials for manufacture of micro-electromechanical components and sensors on new principles;

98. Optoelectronic and photonic materials;

99. High-purity materials manufactured by extraction technology on an industrial scale;

100. Super-elastic, super-durable, ultra-light and environment-friendly materials;

101. Metal-matrix composite materials, polymer-matrix composites applied by electric and electronic techniques for use in harsh environments and construction which are durable in tropical climate;

102. Bio-degradable polymer materials; superabsorbent polymers made from domestic materials;

103. Environment-friendly high-class special-use paints;

104. Special-use technical rubber and synthetic rubber materials for machine building, electricity industry and electronics;

105. Technical ceramics for electric industry and electronics;

106. High-intensity carbon fibers for composite materials;

107. New materials for energy storage and conversion;

108. High-class magnetic materials for use in the energy sector;

109. High-class nano-materials for industry, agriculture, health care, biology and environment;

110. Products covered with membranes manufactured by physical vapor deposition (PVD) and chemical vapor deposition (CVD) technologies;

111. High pressure- and chemical corrosion-resistant composite tubes and fittings for industrial use;

112. Special alloy steel of high durability for industry and construction;

113. High-quality steel sheets, large-sized steel shapes and unwrought steel tubes;

114. High-class aluminum manufactured by 500-kA electrolytic technology.-