

**GOVERNMENT OF INDIA  
ATOMIC ENERGY  
LOK SABHA**

UNSTARRED QUESTION NO:4030  
ANSWERED ON:18.08.2010  
IMPLEMENTATION OF SECOND STAGE DEVELOPMENT  
Patil Shri C. R.

**Will the Minister of ATOMIC ENERGY be pleased to state:**

- (a) whether the Government is pursuing implementation of second stage development of Atomic Energy in the country as envisaged by Dr.Bhabha;
- (b) if so, the details thereof alongwith the achievements made in this regard so far;
- (c) whether Second Stage development is scheduled to be completed by 2012;
- (d) if so, whether the Government intends to move forward to the third stage development programme by 2013;
- (e) if so, whether any time frame has been set for completion of third stage development; and
- (f) if so, the details thereof?

**Answer**

THE MINISTER OF STATE FOR SCIENCE & TECHNOLOGY AND EARTH SCIENCES (INDEPENDENT CHARGE), PMO, PERSONNEL, PUBLIC GRIEVANCES AND PENSIONS AND PARLIAMENTARY AFFAIRS(SHRI PRITHVIRAJ CHAVAN):

(a) Yes, Sir.

(b) The second stage of Indian nuclear power programme envisages development of fast breeder reactors using plutonium-based fuel. The Department of Atomic Energy initiated technology development for liquid metal fast breeder reactors decades back. The Reactor Research Centre (RRC), later renamed as Indira Gandhi Centre for Atomic Research (IGCAR) was set up in 1969 at Kalpakkam in Tamilnadu for this purpose. An experimental 40 MWt Fast Breeder Test Reactor (FBTR) is in operation in IGCAR since October 1985. The reactor has been test bed for the development of subsequent fast breeder reactors. FBTR has provided valuable experience of liquid metal fast breeder technology resulting in the design of the 500 MW Prototype Fast Breeder Reactor (PFBR). The PFBR is now under construction at Kalpakkam.

(c) No, Sir. The first Prototype Fast Breeder Reactor (PFBR) is scheduled to be completed by 2012. Several Fast Breeder Reactors will be set up subsequently. Fast Reactors with metallic fuel having improved breeding ratio will then be developed.

(d) Only after sufficient inventory of U233 is generated through the operations of a large number of FBRs, the third stage programme will be initiated.

(e)&(f) Working out a precise time frame is not possible at this moment. The third stage will be initiated when sufficient installed capacity in the second stage has been built. It is envisaged that the third stage may commence three to four decades after introduction of fast breeder reactors of shorter doubling time.