

REVISED NORMS FOR SETTING UP OF SCIENCE CENTRES/SCIENCE CITIES

1. Genesis

A task force constituted by the Planning Commission in the early 1970's assessed the activities of the Science Museums and gave several recommendations on the course of action to be taken for the growth, sustenance and effective utilisation of these institutions. It brought to light the immense potentiality of the science museums for creating science awareness and scientific temper among the people.

The most important recommendations were to develop science museums/centres in 3 levels – National, Regional and District and to set up science museums/ centres in different parts of the country particularly to serve the rural populace.

Based on this the National Council of Science Museums initiated process to set up national level science museums/centres, Regional Science Centres and District Science Centres located in metropolis, state capitals and district headquarters respectively.

During early 90's while NCSM was setting up science centres in the north-eastern region, it was felt that although the north-eastern states were small in dimension, they had a distinct identity as a State. Therefore, naming the science centres in the northeast, as District Science Centres appeared to be out of place. Consequently these centres were designated as Sub-Regional Science Centres.

Currently there are several nomenclatures existing that categorise the science museums/centres. To avoid such diverse nomenclature, nomenclature of "SCIENCE CENTRE" Category I & II has replaced Regional Science Centre and Sub-Regional Science Centre.

2. Objectives

The Science Centre will have primarily the following objectives:

- To portray the growth of science and technology and their application in industry and human welfare, with a view to develop scientific attitude and temper and to create, inculcate and sustain a general awareness amongst the people.
- To create awareness & enhance public understanding, appreciation & engagement of public in the process of Science & technology.
- To popularise science and technology for the benefit of students and for the common man of the region by organising exhibitions, seminars, popular lectures, science camps and various other programmes.
- To supplement science education given in schools and colleges and to organise various out-of-school educational activities to foster a spirit of scientific inquiry and creativity among the students.

- To design, develop and fabricate science museum exhibits, demonstration equipment and scientific teaching aids for science education and popularisation of science.
- To organise training programmes for science teachers / students/young entrepreneurs/ technicians/physically challenged/housewives and others on specific subjects of science, technology and industry.

3. Concept

A science centre provides an experiment based learning ambience to inculcate a spirit of inquiry, foster creative talent and create scientific temper in the community as a whole. It is characterised by its two-pronged channel of communication - exhibits and activities. While the exhibits, both indoor and outdoor, are mostly interactive, the demonstrations and training programmes are also fully participatory and help children and the adults alike to learn the basics of science through fun and enjoyment.

Science is best understood through experience and experimentation. Science Education, therefore, should essentially involve hands-on, experimentation based learning and should not remain within the confine of textbooks. This is more important in India in view of widespread science illiteracy in the country. A Science Centre on the other hand provides scope of 'doing science' adopting a hands-on approach which it offers to the visitor a number of experimental options through which they can discover the scientific concept themselves. Such mode of education has so far proved to be very effective in supplementing formal science education in our country.

4. Ministry of Culture lays down the revised norms of the Science Cities Scheme for setting up of the following types of Science Centres/Science Cities:

- I. Science Centre (Category-I)
- II. Science Centre (Category-II)
- III. Science City
- IV. Modernization/Upgradation of existing science cities/science centres under the Science Cities scheme

I. Science Centre (Category-I)

Physical and Financial Requirements

- (i) Science Centre located in a city / town with a population of 15 lakhs or more
- (ii) Land: Minimum 7 acres developed land (preferably without any low-lying area and of fairly regular shape), secured (with boundary wall) to be provided by the State /UT Government, free of cost.
- (iii) Capital Expenditure: The capital fund needed for setting up Science Centre (Category I) including Corpus Fund is **Rs. 30.00 Crores** and *Rs.36.00 Crore for NE region, hilly terrains & island territories.*

Detailed break-up of the cost

ESTIMATE FOR SCIENCE CENTRE(Category-I)					
SL.NO	DESCRIPTION OF ITEM	AREA	UNIT	RATE	TOTAL (in Crore)
I.	Cost of land.				00.00
a.	Science Centre :Total –4000 Sqm (minimum)				
	i) R.C.C frame structure: 1) G.F: 2000 SQM 2) 1ST FLOOR: 2000 SQM	4000.0	Sqm	23500.00	9.40
	ii) Stronger structural members to take heavy load above 500 kg/sqm upto 1000 kg/sqm.	4000.0	Sqm	1500.00	0.60
	iii) Large modules over 35 sqm.	4000.0	Sqm	1500.00	0.60
	iv) Resisting earth quake forces.	4000.0	SQM	1140.00	0.46
	v) Every 0.3m Additional height of floor above normal height				
	a) For building (4.0m - 3.35m) = 0.65m/0.3m= 3no's (additional ht.) @ 270.00/- per 0.3m i.e (270.00x3)=810.00/- (G.F.)	4000.0	Sqm	810.00	0.32
	vi) Every 0.3 m higher plinth over normal plinth height of 0.9m	2000	Sqm	540	0.11
	SUB TOTAL =				11.49
b.	Internal & External electrification work 17.5%				2.01
c.	Internal Water supply ,Sanitary Installation and External service connection 9%				1.03
d.	Car and bus parking areas / internal roads / landscaping / water body / Sewer/ Strom drainage (For 5.0 acre land)	4000	Sqm	475	0.19
e.	Pile foundation, if required, will be considered after getting Soil Test Report				
	Sub Total =				14.72
f.	Cost Index till date 10%				1.47
	Total=				16.19
g.	Architect fee @4%				0.65
	Grand Total=				16.84
II.	a. Three thematic galleries of app. 600 sq. mtrs with 50 exhibits each				2.50
	b. Science Park of approx. 4 acres area with pathway and required exhibits (50 nos.)				0.90
	c. Inflatable dome planetarium system (Taramandal)				0.08
	d. Fully functional exhibit development lab				0.15
	e. Other facilities like Computer training area, Library, Conference Room, Stores, and Office etc. with all required infrastructures.				0.50
	f. Training of the recruited staff members and other miscellaneous expenses				0.10
	g. 3 D theatre facility with equipment, furniture etc.				0.60

	h. Misc. (Building/Auditorium furnishing, signage, murals etc.)	0.20
	i. Salary & TA/DA of Project Staff	0.80
		22.67
	Total	23.00
	Towards Corpus Fund for the Operational deficit funding of Science Centre (Category-I) after Inauguration (@30% of the project cost)	7.00
	Grand Total	30.00*
	For NE region , hilly terrains & Island Territories (with an increase of 20% of the project cost)	27.60**
	For NE region , hilly terrains & Island Territories (with an increase of 20% of the corpus fund)	8.40
	For NE region , hilly terrains and island territories Grand Total	36.00**

* The cost of the project is based on the current DPAR rates and shall be subject to revision as per RBI cost indices from time to time.

** This amount shall be Rs.36.00 Crore for NE region, hilly terrains & island territories, in case any proposal is considered by Government of India in future.

(iv) Fund Requirement:

Science Centre (Scheme ‘A’) – The estimated Capital cost of this Category of Science Centre shall be Rs. 30.00 Crores (Project cost is Rs. 23 Crores and corpus fund is Rs. 7 Crores). It can be set up in locations /regions where the Science Centre activities have not yet started or in priority areas. However, for *NE region, hilly terrains & island territories*, the capital cost of science centre will be Rs.36.00 Crores (project cost is Rs. 27.60 Crores and corpus fund is Rs. 8.40 Crores). Ministry of Culture, Government of India may consider providing full funding for such Centres through NCSM.

Science Centre (Scheme ‘B’) – The capital cost of the Science Centre project (Category I) will be Rs.30.00 Crores. (Project cost is Rs. 23 Crores and corpus fund is Rs. 7 Crores). However, for *NE region, hilly terrains & island territories*, the capital cost of science centre will be Rs.36.00 Crores (project cost is Rs. 27.60 Crores and corpus fund is Rs. 8.40 Crores). The capital expenditure for Science Centre (Category I) will be shared on 50:50 basis and the **corpus fund, if shared by Government of India, in no case shall exceed 20% of the total Corpus Fund.**

Science Centre (Scheme ‘C’) – The Capital cost of the Science Centre will be Rs. 30.00 Crores (Project cost is Rs. 23 Crores and corpus fund is Rs. 7 Crores). However, for *NE region , hilly terrains & island territories*, the capital cost of science centre will be Rs.36.00 Crores (project cost is Rs. 27.60 Crores and corpus fund is Rs. 8.40 Crores).The State Govt./U.T. shall fully fund this science centre project and set up the Science Centre with technical support from NCSM within this budget.

(v) YEAR WISE Utilization OF CAPITAL EXPENDITURE

a. For normal locations

(Rs. In Crore)

Source	Project Cost (to be shared between GoI & State Govt. in 50:50)				Corpus fund	Grand Total
	1 st Year (40%)	2 nd Year (40%)	3 rd Year (20%)	Total		
Govt. of India	4.60	4.60	2.30	11.50	1.40 (Maximum)	12.90
	9.2**	9.2**	4.6**	23.00**	7.00**	30.00**
State/UT Govt.	Rs. 17.10 Crores to be released by State/UT Govt. upfront prior to starting of the project including the minimum Corpus fund of Rs. 5.60 Crores.					

** In case of Govt. of India fully funded project.

b. For NE region including Sikkim

(Rs. in Crore)

Source	Project Cost (to be shared between GoI & State Govt. in 90:10)				Corpus fund	Grand Total
	1 st Year (40%)	2 nd Year (40%)	3 rd Year (20%)	Total		
Govt. of India	9.90	9.90	5.00	24.80	1.70 (Maximum)	26.50
	11.00**	11.00**	5.60**	27.60**	8.40**	36.00**
State Govt.	Rs. 9.50 Crores to be released by State Govt. upfront prior to starting of the project including the minimum corpus fund of Rs. 6.70 Crores.					

** In case of Govt. of India fully funded project.

c. For Hilly terrain & island territories other than locations in 'b' above.

(Rs. in Crore)

Source	Project Cost (to be shared between GoI & State Govt. in 50:50)				Corpus fund	Grand Total
	1 st Year (40%)	2 nd Year (40%)	3 rd Year (20%)	Total		
Govt. of India	5.52	5.52	2.76	13.80	1.70 (Maximum)	15.50
	11.04**	11.04**	5.52**	27.60**	8.40**	36.00**
State/UT Govt.	Rs. 20.50 Crores to be released by State Govt./UT upfront prior to starting of the project including the minimum corpus fund of Rs. 6.70 Crores.					

** In case of Govt. of India fully funded project.

(vi) **Recurring Expenditure:**

The recurring expenditure will be completely borne by the State/UT Government except in cases where Govt. of India decides to fully fund the project and manage it through its professional agency like NCSM. At present, the average annual recurring expenditure for a Regional Science Centre is between Rs. 80.00 to Rs. 100.00 lakhs. Every year

provision for the annual recurring expenditure for maintenance of the centre and organising year round activities shall be made by the State/UT Government.

A corpus fund of Rs. 7.00 Crores for Science Centres in normal locations and Rs. 8.40 Crores in respect of Science Centres in NE region, hilly terrains & island territories will be created to meet the Science Centres operational deficit funding. In no case, principal of the corpus fund will be utilized for any activity. Not more than 85% of the interest can be utilised to meet the operational deficit after inauguration and minimum 15% to be added back to the corpus fund to compensate the inflation on year to year basis. The corpus fund requirement will be projected as project cost & shall be shared between Government of India & State/UT Govt. as per norms.

The corpus fund if shared by Government of India, in no case shall exceed 20% of the total Corpus Fund, except in Cases where Government of India decides to fully fund the project and manage it.

The corpus fund shall be transferred to the Society formed by the State Govt./UT Govt. on handing over the Science Centre after the inauguration and will lie with the Society. However, the fund shall be managed by two members of the society, one of them being the representative of Ministry of Culture/National Council of Science Museums.

(vii) Operation:

The Science Centres may be operated in any one of the following operational mode:

Scheme – ‘A’

The Science Centre will be set up with full funding from the Govt. of India and operated & maintained by the Ministry of Culture through NCSM. Such science centres shall be set up in priority areas or States where science centre activity has still not been initiated. In no case, more than one Science Centre will be set up in any State/U.T. in future, under the scheme. In places where NCSM centres already exist, such provision shall not be applicable.

Scheme – ‘B’

State Governments /U.T. administration desirous of having more than one science centre or wanting accelerated development of Science Centres shall be given priority provided they agree to fund the project(s) on 50:50 cost sharing basis (**Corpus fund if shared by Government of India, in no case shall exceed 20% of the total Corpus Fund**) with free land as well as agree to bear the entire operating cost of the centre after it is developed and handed over to the States/U.T.’s.

Scheme – ‘C’

Under this scheme, State Governments agreeing to fully fund the science centre project and provide land and other required facilities for the science centre shall be accorded priority. NCSM shall provide technical support including exhibits at cost to the State/UT Govt. in setting up of the Science Centre.

In case of projects handed over to the States/UTs, such Science Centre will be operated and maintained by a Registered Society formed by the State/UTs Government.

Science Centres under 'B' & 'C' schemes above shall be monitored by a Society with adequate representation of S&T and science communication professionals and representative of administrative ministry of Government of India & NCSM. The society should be formed immediately after the release of the fund by the State/UT Government towards its share of the capital cost of the project. A representative of the Ministry of Culture, National Council of Science Museums shall be an ex-officio member of the Society or the Governing Council to maintain an organic link with Ministry of Culture and NCSM. The Society shall ensure that the Science Centre functions as per the requirement of its objectives without any deviations.

(viii) Implementation Strategy:

• **Construction**

Science Centre being set up under **Scheme 'A'**– NCSM shall construct the Science Centre building, design, develop, fabricate and install both indoor and outdoor exhibits. The centre will be operated under the administrative control of NCSM.

Science Centre being set up under **Scheme 'B'** – NCSM will complete the Science Centre on a turn-key basis (including construction and commissioning of the Science Centre) and handover the project after completion to the State Government/U.T. NCSM shall start the construction work only after the share or funding is received from the State/UT Govt.

Science Centre being set up under **Scheme 'C'** – The State Government/U.T. shall do the construction of the building of the Science Centre as per inputs from NCSM, develop the Science Park etc. as per advice of NCSM. NCSM shall provide technical & professional support & exhibits at cost to the State/UT Govt. for the project.

• **Recruitment of Staff**

Science Centre under **Scheme 'A'**– NCSM shall recruit and train required manpower for operating the science centre. The required core staff strength for the science centre shall be sanctioned by the Ministry and requisite fund shall be allocated annually to NCSM.

Science Centre under **Scheme 'B'**– Such Science Centre will be operated and maintained by a Registered Society formed by the State/UT Government. The Registered Society so formed by the State/UT Government will complete the recruitment of the required core staff members within 3 months of the release of funds. NCSM shall give technical support to the State/UT Govt. for recruitment of staff to ensure candidates with right aptitude are selected.

Science Centre under **Scheme 'C'**- Such Science Centre will be operated and maintained by a Registered Society formed by the State/UT Government. The Society should be formed immediately on commencement of the project. The Registered Society so formed by the State/UT Government will complete the recruitment of the required core staff members within 3 months after start of the construction work. NCSM shall give technical support for recruitment of staff to the State/UT Govt. to ensure candidates with right aptitude are selected.

- **Training**

Science Centre set up under **Scheme ‘A’** – NCSM shall recruit required core staff for running such science centres and provide them adequate training for operation and maintenance of the science centre.

Science Centre set up under **Scheme ‘B’ & ‘C’** – The Officers and staff recruited by the Registered Society or by the State/UT Govt. will be trained by NCSM in any of its unit. The State/UT Govt. shall depute them to NCSM for necessary training on development, operation and maintenance of Science Centre at least one year prior to completing the project. The cost of such training shall be borne by the State/U.T.

(ix) **Schedule of Recruitment**

Sl. No.	To be recruited and posted within 3 months from the release of the fund by the State Govt.		To be recruited and posted within one year from the release of the fund by the State Govt.	
01	Curator	02	Assistant (General)	01
02	Education Assistant	02	Upper Division Clerk	01
03	Technical Assistant	01	Junior Steno	01
04	Technicians	08	Lower Division Clerk	02
	Total	13	Total	05
Grand Total - 18				

(x) **Time Schedule:**

For a Science Centre, required time for setting up the centre is 33 months.

(xi) **Monitoring**

Monitoring of Science Centres set up as individual Autonomous Societies under Scheme ‘B’ & ‘C’ shall be done by a committee set up by the respective State/UT Governments with due representation from the Ministry of Culture, Government of India, the concerned State Government, their private/corporate partners (if any), NCSM and at least five eminent personalities in the fields of education, culture, S&T, industry, Science Communication and museology.

(xii) **Content:**

The building will have a covered area of 4000 Sq. mtrs. (approx.) of which 1800 Sq. mtrs will be used as exhibit display halls, 1200 Sq. mtrs. as visitors’ activity area and remaining 1000 Sq. mtrs as exhibit development laboratory, office etc. Scope will be provided for future extension of floor area.

Generally the following galleries and facilities will be set up in a Science Centre:

Permanent Galleries:

- Thematic Galleries: The Centre will have two thematic galleries. The galleries of the centre will be multidisciplinary in nature on themes of scientific importance as well as social relevance. The exhibits will be mostly interactive. These will be supplemented with visuals, illustrations and artefacts. The galleries will reflect all aspects of the chosen themes in a way easily comprehensible by students as well as common people.

- Fun Science: A group of interactive exhibits on Physical Science, Mathematics, Geography, Geology, Electronics, Life Science, Chemistry, Computer Science and Information Technology will form this gallery. The exhibits will be providing curriculum support to the students as well as make science learning a fun to the visitors.

Temporary Exhibition Hall:

In this hall various temporary exhibitions on important themes will be organised periodically and on different occasions.

Outdoor Science Park:

Science brought outside the boundary of four walls. Interactive exhibits placed aesthetically in the lush greenery of the park. Children play with them while learns the fundamentals of science. Water body, Aviary, Herbal and Medicinal plant corner, Picnic area for visitors etc. are added attractions.

Taramandal:

The inflatable dome planetarium can provide an excellent way of interactive learning of astronomy. The programme will be held regularly at the centre.

Exhibit Development Lab:

This will be used for regular maintenance of exhibits and development of exhibits and kits in future. The Lab will be equipped with tools and machinery for fitting, carpentry, sheet metal, welding, electrical, electronics and painting works.

Mobile Science Exhibition (Optional):

The Mobile Science Exhibition (MSE) bus of the Centre will travel to schools situated in remote areas and will conduct exhibitions on relevant science and environmental topics throughout the year. This facility will be added to the Science Centre, on allotment of separate budget by the State Govt./UT.

Other facilities:

Computer Training Room, Science Library, Conference Room, Office, Store etc.

Educational and Training Programmes:

The centre will hold regular educational programmes like Science Demonstration Lecture, Popular lecture, Creative Ability Programme, Sky observation through telescopes, Computer awareness programmes, Science Quiz, Science Seminars and Science Fairs, Teachers' Training Programme, Community Awareness Programme, Anti-superstition Programme, Science Film Show etc. for students, teachers and common people. A training hall and a 150-seater auditorium will be used for these purposes.

There will be a **Science Curriculum based activity corner/Innovation corner** where students will learn the basic principles of science through experimentation in science and fabrication of science models, which can be used as teaching aids. This will supplement the formal science education imparted in the schools. **The Innovation corner will help in nurturing innovation, creativity in the young minds.** There will also be a children's activity corner.

(xiii) Project Time line:

Programme Schedule		From the date of placing of order for the construction of building
a	Construction of Building	24 months
b	Development of Science Park	12 months
c	Fabrication of exhibits.	30 months
d	Installation of exhibits	03 months (after completion of other facilities)
e	Opening of the centre	33 months (approx.)

Clearance from the Government:

1. For setting up the Science Centre by NCSM approval is required from Government of India. All other statutory clearances and approvals required by the local authorities of the State/UT Government/other bodies etc. shall be obtained by the State/UT Government.
2. State/UT Govt. Commitment to provide funds as per norms and employ adequate professional staff in case of Science Centres under category 'B' & 'C'.
3. It would be mandatory for the implementing agency to provide provisions for the Solar Roof top in the DPR for setting up of Science City/Science Centre. Necessary approval to procure Solar Roof top system under the Scheme "Jawaharlal Nehru National Solar Mission" is required from M/o New and Renewable energy.

Special Note:

1. The land of the science centre shall be chosen in consultation and approval of NCSM.
2. The land earmarked for the science centre should be free from all encumbrances and encroachment. It should be fully developed and secured (with boundary wall) land with electricity, water, sewerage connection and telecommunication facility available in the nearby vicinity. The land should have good road connectivity for easy access and transport.
3. Apart from the core staff (as per Annexure-I) as indicated in the above proposal, other essential services may be outsourced.
4. The science centre building will be developed in modular form to provide scope for future expansion, if need be, based on the growth of local population and visitor figures to the centre.
5. **The above criteria may be relaxed and/or modified in very special cases by the Government of India.**
6. An MOU will be signed between NCSM & State/UT Govt. for implementation of the Science Centres Project under Scheme 'B' and 'C'.

II. Science Centre (Category II)

(i) Science Centre located in a city/ town with a population between 5 and 15 lakhs and for those located in NE region, hilly terrains and island territories.

(ii) **Land:** Minimum 5.0 acres (preferably without any low-lying area and of fairly regular shape) of developed and secured (with boundary wall) land shall be provided by the State Government free of cost. For NE region, hilly terrains and island territories. 2.5 to 3.0 acres will be acceptable provided the land is having good vicinity & accessibility.

(iii) **Capital Expenditure:** The Capital fund needed for setting up Science Centre of Category II is Rs.15.20 Crores (project cost is Rs. 11.70 Crores and Corpus Fund is Rs. 3.50 Crores). However, for NE region, hilly terrains and island territories, the capital cost of science centres will be Rs. 18.20 Crores (project cost is Rs. 14.00 Crores and corpus fund is Rs.4.20 Crores). The required land for the science centre shall be made available free of cost by the State Govt. or the local body.

(iv) Detailed break-up of the cost

ESTIMATE FOR SCIENCE CENTRE (Category-II)					
SL. NO	DESCRIPTION OF ITEM	AREA	UNIT	RATE	TOTAL (in Crore)
I.	Cost of land.				00.00
a.	Science Centre –Total: 2000Sqm (minimum)				
	i) R.C.C frame structure 1) G.F: 1000 SQM 2) 1ST FLOOR: 1000 SQM	2000	Sqm	23500.00	4.70
	ii) Stronger structural members to take heavy load above 500 kg/sqm. upto 1000 kg/sqm.	2000	Sqm	1500.00	0.30
	iii) Large modules over 35 sqm.	2000	Sqm	1500.00	0.30
	iv) Resisting earth quake forces.	2000	SQM	1140.00	0.23
	v) Every 0.3m Additional height of floor above normal height				
	a) For building (4.0m - 3.35m) = 0.65m/0.3m= 3no's (additional ht.) @ 270.00/- per 0.3m i.e (270.00x3)=810.00/- (G.F.)	2000	Sqm	810.00	0.12
	vi) Every 0.3 m higher plinth over normal plinth height of 0.9m	1000	Sqm	540	0.05
		SUB TOTAL =			5.70
b.	Internal & External electrification work 17.5%				1.00
c.	Internal Water supply, Sanitary Installation and External service connection 9%				0.51

d.	Car and bus parking areas / internal roads / landscaping / water body / Sewer/ Strom drainage (For 5.0 acre land)	2000	Sqm	475	0.10
e.	Pile foundation, if required, will be considered after getting Soil Test Report				
	Sub Total =				7.31
f.	Cost Index till date 10%				0.73
	Total=				8.04
g.	Architect fee @4%				0.32
	Grand Total=				8.36
II.	a.	Two thematic galleries of 250 Sq.m. (25 exhibits)			1.50
	b.	Science Park of approx. 3 acres area with pathway and required exhibits			0.80
	c.	Inflatable dome planetarium (Taramandal)			0.08
	d.	Fully functional exhibit development lab			0.15
	e.	Other facilities like Computer training area, Library, Conference Room, Stores, and Office etc. with all required infrastructures.			0.20
	f.	Salary & TA/DA of Project Staff			0.60
		Total			11.69
		Say			11.70
	Towards Corpus Fund for the Operational deficit funding of Science Centre (Category-II) after Inauguration (@30% of the project cost)				3.51 (Say) ~ 3.50
	Grand Total				15.20
	For NE region, hilly terrains and island territories (Project Cost with an increase of 20%)				14.04 (Say) ~ 14.00
	For NE region, hilly terrains and island territories (Corpus Fund with an increase of 20%)				4.21 (Say) ~ 4.20
	For NE region , hilly terrains and island territories Grand Total				18.20

(v) Fund Requirement:

Science Centre (Scheme ‘A’) – The estimated Capital cost of this Category of Science Centre (Category II) shall be Rs. 15.20 Crores (Project cost is Rs. 11.70 Crores and corpus fund is Rs. 3.50 Crores). It can be set up in locations /regions where the Science Centre activities have not yet started or in priority areas. However, for NE region, hilly terrains and island territories, the capital cost of science centre will be Rs.18.20 Crores (project cost is Rs. 14.00 Crores and corpus fund is Rs. 4.20 Crores). Ministry of Culture, Government of India may consider providing full funding for such Centres through NCSM.

Science Centre (Scheme ‘B’) – The capital cost of the Science Centre project (Category II) will be Rs.15.20 Crores. (Project cost is Rs. 11.70 Crores and corpus fund is Rs. 3.50 Crores). However, for *NE region, hilly terrains & island territories*, the capital cost of science centre will be Rs. 18.20 Crores (project cost is Rs. 14.00 Crores and corpus fund is Rs. 4.20 Crores). The capital expenditure for Science Centre (Category II) will be shared on 50:50 basis and the **corpus fund if shared by Government of India, in no case shall exceed 20% of the total Corpus Fund.**

Science Centre (Scheme ‘C’) – The Capital cost of the Science Centre (Category II) will be Rs. 15.20 Crores (Project cost is Rs. 11.70 Crores and corpus fund is Rs. 3.50 Crores). However, for *NE region, hilly terrains & island territories*, the capital cost of science centre will be Rs.18.20 Crores (project cost is Rs. 14.00 Crores and corpus fund is Rs. 4.20 Crores). The State Govt./U.T. shall fully fund this science centre project and set up the Science Centre with technical support from NCSM within this budget.

(vi) **Year wise phasing of capital expenditure**

a. **For normal locations**

(Rs. in Crore)

Source	Project Cost (to be shared between GoI& State Govt. in 50:50)				Corpus fund	Grand Total
	1 st Year (40%)	2 nd Year (40%)	3 rd Year (20%)	Total		
Govt. of India	2.34	2.34	1.17	5.85	0.70 (Maximum)	6.55
	4.68**	4.68**	2.34**	11.70**	3.50**	15.20**
State/UT Govt.	Rs. 8.65 Crores to be released by State/UT Govt. upfront prior to starting of the project including the minimum corpus fund of Rs. 2.80 Crores.					

** In case of Govt. of India fully funded project.

b. **For NE region including Sikkim**

(Rs. in Crore)

Source	Project Cost (to be shared between GoI& State Govt. in 90:10)				Corpus fund	Total (100%)
	1 st Year (40%)	2 nd Year (40%)	3 rd Year (20%)	Total		
Govt. of India	5.04	5.04	2.52	12.60	0.84 (Maximum)	13.44
	5.60**	5.60**	2.80**	14.00**	4.20**	18.20**
State Govt.	Rs. 4.76 Crores to be released by State Govt. upfront prior to starting of the project including the minimum corpus fund of Rs. 3.36 Crores.					

** In case of Govt. of India fully funded projects.

c. For hilly terrain , island territories other than ‘b’ above.

(Rs. in Crore)

Source	Project Cost (to be shared between GoI & State Govt. in 50:50)				Corpus fund	Total (100%)
	1 st Year (40%)	2 nd Year (40%)	3 rd Year (20%)	Total		
Govt. of India	2.80	2.80	1.40	7.00	0.84 (Maximum)	7.84
	5.60**	5.60**	2.80**	14.00**	4.20**	18.20**
State/UT Govt.	Rs. 10.36 Crores to be released by State/UT Govt. upfront prior to starting of the project including the minimum corpus fund of Rs. 3.36 Crores.					

** In case of Govt. of India fully funded projects.

(vii) **Recurring Expenditure:**

The recurring expenditure will be completely borne by the State/UT Government except in cases where Govt. of India decides to fully fund the project under Scheme ‘A’ and manage it through its professional agency like NCSM. At present, the average annual recurring expenditure for a science centre is between Rs.40.00 to Rs.65.00 lakhs. Every year provision for the annual recurring expenditure for maintenance of the centre and organising year round activities shall be made by the State/UT Government.

A corpus fund of Rs.3.50 Crores for Science Centres in normal locations and Rs. 4.20 Crores in respect of Science Centres in NE region, hilly terrains & island territories will be created to meet the Science Centres operational deficit funding. In no case, principal of the corpus fund will be utilized for any activity. Not more than 85% of the interest can be utilised to meet the operational deficit after inauguration and minimum 15% to be added back to the corpus fund to compensate the inflation on year to year basis. The corpus fund requirement will be projected as project cost & shall be shared between Government of India & State/UT Govt. as per norms.

The corpus fund, if shared by Government of India, in no case shall exceed 20% of the total Corpus Fund, except in Cases where Government of India decides to fully fund the project and manage it.

The corpus fund shall be transferred to the Society formed by the State Govt./UT Govt. on handing over the Science Centre after the inauguration and will lie with the Society. However, the fund shall be managed by two members of the society, one of them being the representative of Ministry of Culture/National Council of Science Museums.

(vii) **Operation:**

The Science Centres may be operated in any one of the following operational mode:

Scheme – ‘A’

The Science Centre will be set up with full funding from the Govt. of India and operated & maintained by the Ministry of Culture through NCSM. Such science centres shall be set up in priority areas or States where science centre activity has still not been initiated. In no case, more than one Science Centre will be set up in any

State/U.T., in future, under this scheme. In places where NCSM centres are already existing, such provision shall not be applicable.

Scheme – ‘B’

State Governments /UT administration desirous of having more than one science centre or wanting accelerated development of Science Centres shall be given priority provided they agree to fund the project(s) on 50:50 cost sharing basis with free land as well as agree to bear the entire operating cost of the centre after it is developed and handed over to the States/U.T.’s.

Scheme – ‘C’

Under this scheme, State/UT Governments agreeing to fully fund the science centre project and provide land and other required facilities for the science centre shall be accorded priority. NCSM shall provide technical support including exhibits at cost to the State Govt. in setting up of the Science Centre.

In case of projects handed over to the States/UT’s, such Science Centre will be operated and maintained by a Registered Society formed by the State/UT’s Government.

However, Science Centres under ‘B’ & ‘C’ schemes above shall be managed/monitored by the Society with adequate representation of S&T and science communication professionals and representative of administrative ministry of Government of India and NCSM. The society should be formed immediately after the release of the fund by the State Government towards its share of the capital cost of the project. A representative of the Ministry of Culture and National Council of Science Museums shall be an ex-officio member of the Society or the Governing Council to maintain an organic link with Ministry of Culture and NCSM. The Society shall ensure that the Science Centre functions as per the requirement of its objectives without any deviations.

(viii). Implementation Strategy:

- **Construction**

Science Centre being set up under **Scheme ‘A’** - NCSM shall construct the Science Centre building, design, develop, fabricate and install both indoor and outdoor exhibits. The centre will be operated under the administrative control of NCSM.

Science Centre being set up under **Scheme ‘B’** – NCSM will complete the Science Centre on a turn-key basis (including construction and commissioning of the Science Centre) and handover the project after completion to the State Government/U.T. NCSM shall start the construction work only after the share or funding is received from the State/UT Govt.

Science Centre being set up under **Scheme ‘C’** – The State Government/U.T. shall do the construction of the building of the Science Centre as per inputs from NCSM; develop the Science Park etc. as per the advice of NCSM. NCSM shall provide technical & professional support & exhibits at cost to the State Govt. for the project.

- **Recruitment of Staff**

Science Centre under **Scheme ‘A’**– NCSM shall recruit and train required manpower for operating the science centre. The required core staff strength for the science

centre shall be sanctioned by the Ministry and requisite fund shall be allocated annually to NCSM.

Science Centre under **Scheme ‘B’**– Such Science Centre will be operated and maintained by a Registered Society formed by the State/UT Government. The Registered Society so formed by the State/UT Government will complete the recruitment of the required core staff members within 3 months of the release of funds. NCSM shall give technical support to the State Govt. for recruitment of staff to ensure candidates with right aptitude are selected.

Science Centre under **Scheme ‘C’**- Such Science Centre will be operated and maintained by a Registered Society formed by the State/UT Government. The Society should be formed immediately on commencement of the project. The Registered Society so formed by the State/UT Government will complete the recruitment of the required core staff members within 3 months after start of the construction work. NCSM shall give technical support for recruitment of staff to the State/UT Govt. to ensure candidates with right aptitude are selected.

- **Training**

Science Centre set up under **Scheme ‘A’** – NCSM shall recruit required core staff for running such science centres and provide them adequate training for operation and maintenance of the science centre.

Science Centre set up under **Scheme ‘B’ & ‘C’** – The officers and staff recruited by the Registered Society or by the State/UT Govt. will be trained by NCSM in any of its unit. The State/UT Govt. shall depute them to NCSM for necessary training on development, operation and maintenance of Science Centre at least one year prior to completing the project. The cost of such training shall be borne by the State/U.T.

(viii) **Schedule of Recruitment:**

Sl. No.	To be recruited and posted within 3 months from the release of the fund by the State Govt.		To be recruited and posted within one year from the release of the fund by the State Govt.	
	01	Curator	01	Lower Division Clerk
02	Education Assistant	01		
03	Technicians	04	-	-
	Total	06		02
GRAND TOTAL - 08				

(ix) **Time Schedule:**

For a Science Centre the required time for setting up the centre is 27 months (approx.).

(x) **Monitoring**

Monitoring of Science Centres under Scheme ‘B’ & ‘C’, set up as individual Autonomous Societies shall be done by a committee set up by the respective State/UT Governments with due representation from the Ministry of Culture, Government of India, the concerned State Government, their private/corporate partners (if any), NCSM and at least five eminent personalities in the fields of education, culture, S&T, industry, science communication and museology.

(x) Content:

The building will have a covered area of 2000 Sq. Mtrs. (approx.) of which 1000 Sq. Mtrs. will be used as exhibit display halls, 300 Sq. Mtrs. for Temporary Exhibition area, 700 Sq. Mtrs. as visitors' activity area, exhibit development laboratory, office, Auditorium, Taramandal (Inflatable dome planetarium), Children Activity Area, stores, conference room/library and adult activity area, visitor's amenities etc.

Generally the following galleries and facilities will be installed in a Science Centre:

Permanent Galleries:

- Thematic Gallery: The main gallery of the centre will be on a theme of scientific importance as well as of social relevance such as Environment, Forest, Mountain, Natural Resources, Indigenous Technology highlighting the local resources and their apt utilisation. The exhibits will be mostly interactive and supplemented with visuals, illustrations and artefacts.
- Fun Science: A group of interactive exhibits on Physical Science, Mathematics, Geography, Geology, Electronics, Life Science, Chemistry, Computer Science and Information Technology will form this gallery. The exhibits will be providing curriculum support to the students as well as make science learning a fun to the visitors.

Outdoor Science Park:

Science brought outside the boundary of four walls. Interactive exhibits placed aesthetically in the lush greenery of the park. Children play with them while they learn the fundamentals of science. Water body, Aviary, Herbal and Medicinal plant corner, Picnic area for visitors etc. are added attractions.

Taramandal:

The inflatable dome planetarium can provide an excellent way of interactive learning of astronomy. The programme will be held regularly at the centre.

Exhibit Development Laboratory:

This will be used for regular maintenance of exhibits and development of exhibits and kits in future.

Other facilities:

Temporary exhibition hall, Science Library, Conference Room, Office, Store etc.

Educational and Training Programmes:

The centre will hold regular Educational Programmes like Science Demonstration Lecture, Popular lecture, Creative Ability Programme, Sky observation through telescopes, Computer awareness programmes, Science Quiz, Science Seminars and Science Fairs, Teachers' Training Programme, Community Awareness Programme, Anti-superstition Programme, Science Film Show etc. for students, teachers and common people. A Training Hall and a 150-seat Auditorium will be used for these purposes.

There will be a **Science Curriculum based activity corner/Innovation corner** where students will learn the basic principles of science through experimentation in science and fabrication of science models, which can be used as teaching aids. This will supplement the formal science education imparted in the schools. **The Innovation corner will help in nurturing innovation, creativity in the young minds.** There will also be a children's activity corner.

(x) Project time Line:

Programme Schedule		From the date of placing of order for construction of building
a	Construction of Building	18 months
b	Development of Science Park	12 months
c	Fabrication of exhibits.	24 months
d	Installation of exhibits	03 months (after completion of other facilities)
e	Opening of the centre	27 months (approx)

Clearance from the Government:

1. For setting up the Science Centre by NCSM all statutory clearances and approvals required by the local authorities of the State/UT Government/other bodies etc. shall be obtained by the State/UT Government.
2. State/UT Govt. Commitment to provide funds as per norms and employ adequate professional staff in case of Science Centres under category 'B' & 'C'.

Special Note:

1. The land of the science centre shall be chosen in consultation and approval of NCSM.
2. The land earmarked for the science centre should be free from all encumbrances and encroachment. It should be fully developed and secured (with boundary wall) land with electricity, water, sewerage connection and telecommunication facility available in the nearby vicinity. The land should have good road connectivity for easy access and transport.
3. Apart from the core staff (as per Annexure-I) as indicated in the above proposal, other essential services may be outsourced.
4. The science centre building will be developed in modular form to provide scope for future expansion, if need be, based on the growth of local population and visitor figures to the centre.
5. **The above criteria may be relaxed and/or modified in very special cases by the Government of India.**
6. An MOU will be signed between NCSM & State/UT Govt. for implementation of the Science Centres Project under Scheme 'B' and 'C'.

III. Science Cities

1. Concept

A Science City shall be conceptually similar to a Science Centre. However, it will be larger in dimension with a focus in frontier areas of Science and Technology and edutainment shall be financially self-sustainable. It shall be conceptualized in such a manner that it is attractive and useful to students, families, tourist and general public. It will use state-of-the-art communication tools and technology in its presentation.

2. Main Objectives

- i) To portray the growth of science and technology and their applications in industry and human welfare, with a view to develop scientific attitude and temper and to create, inculcate and sustain a general awareness amongst the people.
- ii) To popularize science and technology in cities, urban and rural areas for the benefit of students and for the common man by organizing exhibitions, seminars, popular lectures, science camps and various other programs.
- iii) To promote and enhance public understanding of the culture of science and technology.
- iv) To supplement science education given in schools and colleges and to organize various out-of-school educational activities to foster a spirit of scientific enquiry and creativity among the students.
- v) To design, develop and fabricate science museum exhibits, demonstration equipment and scientific teaching aids for science education and popularization of science.
- vi) To organize training programmes for science teachers /students /young entrepreneurs/technicians/physically challenged/housewives and others on specific subjects of science, technology and industry.

3. Contents

The exhibits and activities of a Science City shall have the right mix of scientific values and novelty in presentation so as to be able to attract the common people from every walk of life. Edutainment shall be the key concept in designing the exhibit and activities of the Science City. It will provide wide opportunities for visitors' participation in activities related to science and technology. The following major areas may be considered:-

A) Face to face with science and technology

- A science exposition hall to provide an exposure on cutting edge areas of science and technology and their impact on the society through interesting and enjoyable thematic presentation, experience based and immersive exhibits like large format films, 3D presentations, virtual reality experiences, simulators and many more hi-tech systems; the thematic presentation shall highlight Indian endeavour.

- The exhibits shall be multidisciplinary in theme and of hands-on minds-on in nature to the extent possible showcasing frontier areas of S & T. The topics change over a period of time with emergence of new areas in S&T. However, in the present context, subjects like Nano-technology, Space technology, Biotechnology, Robotics and Optical fibres, Computers, Earth Science, Human Body, Information technology, Bio-informatics, Heavy industries, Agriculture, Environment and recent understanding of scientific concepts etc. may be considered.
- A dedicated infrastructure shall be provided for corporate bodies, R&D institutions, scientific departments etc. to showcase current status of science and technology and R & D initiatives in respective areas of their activity.
- A 600–1000 seated auditorium for multipurpose use viz. science education programmes and science film shows, organising educational, cultural, industrial/corporate programmes; (the capacity of the auditorium has been fixed keeping in view that one million visitors would visit the Science City).

Other institutions shall be encouraged to organise their conferences, lectures, meetings, exhibitions and cultural events in the Science City on payment of rental charge to cover all expenses for regular running and operation of the auditorium including electricity charges, municipal taxes etc. Although the State Governments shall be approached to provide electricity at concessional rates and ensure municipal tax at non-commercial rate, all taxes and royalties for conducting such programmes shall be borne by the organisers.

B) Experimentation and curriculum supplement

- Interactive exhibits supplementing science education in schools and to explain basic principles of science and technology in an interesting and entertaining manner will be developed and set up here.
- Hands on activity based laboratories for the visitors and students with the intention to foster public awareness, engagement and understanding of cutting edge science and engineering like Biotechnology, Nanotechnology, and Photonics etc. shall be set up. Such labs shall aim to link science centres and educational institutions with research institutions engaged in active cutting edge science and technology experimentation and research.

C) Learning science outside the four walls

Science Park aims to facilitate “**edutainment**”, i.e., education through entertainment. It would be designed to make science relevant to everyday lives through a non-formal, “hands on, mind on” approach. Characterized by its two-pronged channel of communication – exhibits and activities, the exhibits will be mostly interactive and help children and the adults alike to learn the basics of science through fun and enjoyment in natural and non-coercive situations. It would have something of interest to everyone regardless of social strata, education or age group and create a culture of learning. Science Park will provide a bridge to unite business, industry and community.

D) Visitors' recreational facilities/amenities

This area will include water bodies, a nature trail, road train, fountains, food plaza, gift and souvenir shops, restaurants, rest rooms and such other facilities which shall not only satisfy the needs of the visitors but increase the holding time.

E) Infrastructure

The Science City will have following main facilities for the public:

- Science Exploration hall consisting of 5-7 large interactive science exhibitions
- Space Odyssey consisting of digital dome theatre, 3D show, simulator and space science exhibitions
- Demonstration areas to explain science through activities & experiments
- Outdoor Science Park
- Evolution Park
- Auditorium
- Workshop
- Public utilities consisting of cafeteria, gift store, visitor interpretation area etc.
- Car parking
- Gate Plaza with ticketing, security & visitor reception and interpretation area.

4. Eligibility criteria and infrastructure

- i) The new Science Cities shall be set up preferably in those places where no major Science Centre exists. However, in locations where footfall to the science centre is substantial the science centre could be upgraded to a Regional Science City or **a separate Science City could be set up in State capitals or the largest city of the State provided that the Science City is viable and financially self-sustainable.**
- ii) The State Government will provide the following infrastructure facility free of cost:
 - (a) At least 25 acres of centrally located, easily accessible, fully developed, secured (with boundary wall) land without any encumbrances; However to do justice to exhibits, facilities especially those requiring open spaces and future expansion 30 acres would be preferable.
 - (b) Road connectivity,
 - (c) Telecommunication facilities,
 - (d) Power supply, water supply etc.
 - (e) Sewerage and storm water drainage system,
 - (f) Adequate public/private transport facilities for accessibility.
 - (g) Commitment to provide funds as per norms and recruit adequate professional staff.

iv. **Pre-requisites for approval by the Ministry of Culture**

Feasibility Report: Detailed studies are to be conducted to ascertain the feasibility of any Science City project. The study shall carefully determine whether the proposed Science City is viable and financially self-sustainable. A demand survey shall also be included to point out need for a Science City, assess and project footfall. The study shall be conducted by engaging professional consultancy service providers with active involvement of NCSM. Appropriate consultancy fees are to be paid to NCSM for such involvement.

The feasibility report should clearly recommend for setting up of a Science City in that particular location in order to be eligible for a Science City.

The land proposed for Science City should have the provision for modular expansion at a later date, should the need arise.

v. **Relaxation of Criteria:**

The above criteria may be relaxed and/or modified in very special cases by the Government of India.

vi. State Governments/Union Territories/the Societies / Authorities promoted by the State/UT Govts. for the purpose of Science City shall be eligible for financial assistance from the Central Government as per the norms.

vi. The State Government shall also make suitable provision for providing water, electricity, local taxes etc. at concessional rates as available to the educational institutions.

5. Exhibition area

A. Floor area for indoor exhibitions (minimum)

(a)	Science Exposition Hall sq.mt.	-	10000
(b)	Open laboratory and interactive exhibits hall sq.mt.	-	2500
(c)	Entrance Plaza and visitor's facilities sq.mt.	-	1500

Total: 14,000 sq.mt. -----

B. Outdoor expositions

(a) Science Park 20,000 sq.mt.

While developing the permanent infrastructure care must be taken to maintain a ratio of 25:75 for covered and open areas so that the visitors are not confined in a particular place and there is enough space to accommodate a large gathering on special days of the year.

Provision for future extension shall also be made. A portion of the land area may be developed as visitor's services zone which may be utilized by other agencies for raising funds to meet the operation costs of the Science City in order to make it self-sustaining.

6. Time Schedule

Time required for implementation of Science City shall be about 54 months from the start of the construction work of the main building. In the first phase a portion of Science Exploration hall comprising of full dome movie projection unit, a motion simulator and a 3D theatre will be set up along with the entrance Plaza. This will help in revenue generation.

7. Budget (Average based on current DPAR 2015)

Total estimated Capital cost for implementation of a new Science City project is approx. **Rs.191 Crores** (project cost is Rs. 147 Crores and corpus fund is Rs. 44 Crores). For NE region, hilly terrains and island territories, the capital cost of Science Cities will be Rs.230.00 Crores (project cost is Rs. 177.00 Crores and corpus fund is Rs. 53.00 Crores). However, detailed estimate for an individual project element needs to be prepared depending upon site condition, building design, foreign currency value and local cost of construction. The project cost will be shared on 40:60 basis for normal locations, **hilly terrain and island territories**. However, for **NE region including Sikkim** the sharing of the Capital expenditure shall be at 10: 90 between the respective State Govt./UT Adm. and the Govt. of India. **The corpus fund, if shared by Government of India, in no case shall exceed 20% of the total Corpus Fund, except in Cases where Government of India decides to fully fund the project and manage it.**

A suggestive break up of different items of expenditure is as follows:

ESTIMATE FOR CONSTRUCTION OF SCIENCE CITY BUILDING					
SL. NO	DESCRIPTION OF ITEM	AREA	UNIT	RATE	TOTAL (in Crore)
I.	<u>Expenditure on Building and other works</u>				
a.	Cost of land. * State Govt. shall provide it free of cost as part of its share for the project.				00.00
b.	Science Centre building 14,000 sq. mtrs (minimum) with indoor exhibition halls. (@ Rs. 23500/- per Sqmt)				
	i) R.C.C frame structure	14000.0	Sqm	23500.00	32.90
	ii) Stronger structural members to take heavy load above 500 kg/sqm. upto 1000 kg/sqm.	14000.0	Sqm	1500.00	2.10
	iii) Large modules over 35 sqm.	14000.0	Sqm	1500.00	2.10
	iv) Resisting earth quake forces.	8000.0	Sqm	1140.00	0.91
	v) Every 0.3m Additional height of floor above normal floor height of 3.35 M				

	a) For building (4.2m - 3.35m) = 0.85m/0.3m= 3no's (additional ht.) @ 270.00/- per 0.3m i.e (270.00x3)= 810.00/-	14000.0	Sqm	810.00	1.13
	vi) Every 0.3 m higher plinth over normal plinth height of 0.6m	8000.0	Sqm	270.00	0.22
	vii) Pile foundation upto a depth of 25 mts (On ground floor area only)	8000.0	Sqm	23500.00	18.80
	(viii) Land development cost(levelling, Horticulture development, for Storm Water drainage etc.) @ Rs.285.00 per Sq. mtrs. as per current CPWD norms)	100000	Sqm	285.00	2.85
	SUB TOTAL =				61.01
c.	Internal electrification work 17.5%				10.17
d.	Internal Water supply & Sanitary Installation @ 4%				2.44
	TOTAL =				73.62
e.	Cost Index 10%				6.78
	SAY =				80.40
f.	Car and bus parking areas/ internal roads/ landscaping				3.50
g.	Air-condition/ insulation/ acoustics				4.50
h.	Transformer (2 MW)/ UPS/ DG, Set)				3.00
i.	Chairs/ Carpet				1.00
j.	Planning, supervision and construction @ 6 %				5.54
	TOTAL=				97.94
II.	Expenditure on exhibits, equipment and stores				
	a. Large format film projection unit with accessories				16.00
	b. Simulator and 3D Film Theatre				04.00
	c. Exhibits and artefacts				
	i) Thematic exhibits for Face to Face with S&T				08.00
	ii) Interactive exhibits for experimentation & curriculum supplement				02.00
	d. Projection equipment, audio-visuals, electrical installations etc.				
	i) For Auditorium				01.00
	ii. For Digital Panorama				12.00
	e. Misc. equipment				
	i) Workshop tools and machineries				01.00
	f. Development of Science Park exhibits including cost of exhibits				01.50
	h. Salary of Project staff				02.50
	i. TA/DA for project staff				0.40

	j. Other Adm. Expenses	0.40
	k. Advt. & Publicity	0.20
	Subtotal :	49.00
	Total :	146.94
		(Say 147.00)
	Towards provision for Corpus Fund to meet the Operational deficit funding of Science City after inauguration (@ 30.0% of the project cost)	44.00
	Grand Total	191.00*
	For NE region, hilly terrains and island territories (Project Cost with an increase of 20%)	176.40 Say ~ 177.00
	For NE region, hilly terrains and island territories (Corpus Fund with an increase of 20%)	52.80 Say ~ 53.00
	For NE region , hilly terrains and island territories Grand Total	230.00**
iii	Foreign Exchange component included in Item (ii) above	
	a. Large format film projection unit with accessories	16.00
	b. Space Capsule (Simulator) & 3D Theatre	04.00
	c. Projection equipment for Digital Panorama	12.00
	c. Misc. for other equipments	01.00
	Subtotal :	33.00
iv.	No foreign exchange is involved in bringing foreign experts or for buying foreign expertise.	

* The cost of the project is based on the current DPAR rates and shall be subject to revision as per RBI cost indices from time to time.

** The amount of Rs.230 crores is applicable only in respect of the proposals of NE region, hilly terrains and island territories, in case any proposal is to be considered in future by Government of India.

(The above estimate is for budgetary purpose only. Detailed cost estimates for individual projects are to be worked out based on the master plan prepared for the project.)

	Cost Index of Delhi as on 1/4/2011	49%
	Cost Index of Delhi as on 1/4/2012	61%
	Cost Index of Delhi as on 1/4/2015 as on prorata basis	110%

8. (A) Funding Pattern

- (i) The financial participation of the Central Government for new Science Cities will be limited to ₹88.20 Crores (60% out of a total Project Cost of ₹147.00 Crores) and ₹8.80 Crores (Maximum of 20% of the Corpus Fund of ₹44.00 Crores) only. In case of Science City in NE region including Sikkim, the financial participation of the Central Government for new Science Cities will be limited to ₹159.30 Crores (90% out of a total Project Cost of ₹177.00

Crores) and not more than ₹17.70 Crores (Maximum of 20% of the Corpus Fund of ₹53.00 Crores) only.

- (ii) The State Government shall arrange for the balance fund of ₹58.80 Crores (40% out of a total Project Cost of ₹147.00 Crores) and ₹35.20 Crores (Minimum of 80% of the Corpus Fund of ₹44.00 Crores). In case of Science City in NE region including Sikkim, the financial participation of the State Government for new Science Cities will be limited to at least ₹17.70 Crores (10% out of a total Project Cost of ₹177.00 Crores) and ₹42.40 Crores (Minimum of 80% of the Corpus Fund of ₹53.00 Crores) plus a 25 acre of developed land made available free of cost for the purpose of setting up the Science City. State contribution may be allotted either by them or by a private/ corporate agency or raised from a combination of both. The State Govt. shall release their share (including the corpus fund) upfront before the start of the project.

9. Year wise utilization of capital expenditure

a. For normal locations

(Rs. in Crore)

Source	Project Cost (to be shared between GoI & State Govt. in 60:40)						Corpus fund	Grand Total
	1 st Year (15%)	2 nd Year (25%)	3 rd Year (25%)	4 th Year (25%)	5 th Year (10%)	Total		
Govt. of India	13.25	22.05	22.05	22.05	8.80	88.20	8.80 (Maximum)	97.00
	22.05**	36.75**	36.75**	36.75*	14.70*	147.00**	44.00**	191.00**
State/UT Govt.	Rs. 94.00 Crores to be released by State Govt. upfront prior to starting of the project including the minimum corpus fund of Rs. 35.20 Crores.							

** In case of Govt. of India fully funded project.

b. For NE region including Sikkim

(Rs. in Crore)

Source	Project Cost (to be shared between GoI & State Govt. in 90:10)						Corpus fund	Grand Total
	1 st Year (15%)	2 nd Year (25%)	3 rd Year (25%)	4 th Year (25%)	5 th Year (10%)	Total		
Govt. of India	23.90	39.80	39.80	39.80	16.00	159.30	10.60 (Maximum)	169.90
	26.55**	44.25**	44.25**	44.25**	17.70**	177.00**	53.00**	230.00**
State Govt.	Rs. 60.10 Crores to be released by State Govt. upfront prior to starting of the project including the minimum corpus fund of Rs. 42.40 Crores.							

** In case of Govt. of India fully funded projects.

c. For Hilly terrain & island territories other than 'b' above.

(Rs. in Crore)

Source	Project Cost (to be shared between GoI & State Govt./UT in 60:40)						Corpus fund	Grand Total
	1 st Year (15%)	2 nd Year (25%)	3 rd Year (25%)	4 th Year (25%)	5 th Year (10%)	Total		
Govt. of India	15.93	26.55	26.55	26.55	10.62	106.20	10.60 (Maximum)	116.80
	26.55**	44.25**	44.25**	44.25**	17.70**	177.00**	53.00**	230.00**
State/UT Govt.	Rs. 113.20 Crores to be released by State Govt./UT upfront prior to starting of the project including the minimum corpus fund of Rs. 42.40 Crores.							

** In case of Govt. of India fully funded projects.

9. Management and operation

- i) The new Science Cities shall be made independent autonomous bodies run and managed by societies with adequate representation of S & T and Science Communication professionals as members and representative from the administrative ministry of Govt. of India. The societies shall be formed by the respective State Governments in consultation of NCSM. NCSM shall be paid normal consultancy fees for technical guidance and consultancy in exhibit development and manpower training during the execution of project, if the project is undertaken by the Society. In that case NCSM shall be consulted for inputs for the project design & planning. These Societies are to be formed before start of execution of the projects so that they are able to receive monetary grants from both Central and State/UT Govts. and the private/corporate/industry sources as well as raise loans from financial institutions. Gap funding for management & operation if any shall be provided by the State/UT Govts.
- ii) All Science Cities shall be maintained in the best possible way by generating enough funds by themselves and by recruiting adequate trained & professional staff to sustain all the operations. However capital grant for future developments may be raised from different sources. Corporate investments may be considered in two forms - either capital CSR grant or through Private Public Partnership if it is not forthcoming then through revenue support over the years against use of facilities and infrastructure.
- iii) *A corpus fund of Rs. 44.00 Crores for Science Cities in normal locations and Rs. 53.00 Crores in respect of Science Cities in NE region, hilly terrains & island territories will be created to meet the Science Cities operational deficit funding. In no case, principal of the corpus fund will be utilized for any activity. Not more than 85% of the interest can be utilised to meet the operational deficit after inauguration and minimum 15% to be added back to the corpus fund to compensate the inflation on year to year basis. The corpus fund requirement will be projected as project cost & shall be shared between Government of India & State/UT Govt. as per norms.*

The corpus fund, if shared by Government of India, in no case shall exceed 20% of the total Corpus Fund, except in Cases where Government of India decides to fully fund the project and manage it.

The corpus fund shall be transferred to the Society formed by the State Govt./UT Govt. on handing over the Science Centre after the inauguration and will lie with the Society. However, the fund shall be managed by two members of the society, one of them being the representative of Ministry of Culture/National Council of Science Museums.

10. Project implementation

The project shall normally be undertaken by NCSM on turn-key basis. The funds for the project will be received by NCSM, both from Central Govt. & State Govts. NCSM shall set up the Science City and hand over to the State Govt./Society for operation & management. An MOU will be signed between NCSM & State Govt. for implementation of the Science City Project.

In case of a State/UT Govt. seeking financial support from Government of India for a new Science City project, to be implemented by the concerned Societies formed by the respective State/UT Govts., the project will be vetted and processed by NCSM for approval of competent authority in Ministry of Culture, Govt. of India. In that case funds will be released by Govt. of India based on the recommendations of a Project implementation committee constituted by Ministry of Culture, Govt. of India with representatives of Ministry of Culture, NCSM, experts in the field and the State Govt.

11. Monitoring

Monitoring of Science Cities set up by individual Autonomous Societies shall be done by high level committees set up by the respective State Governments with due representation from the Ministry of Culture, Government of India, the concerned State Government, their private/corporate partners (if any), NCSM and at least five eminent personalities in the fields of education, culture, S&T, industry, science communication and museology.

12. Staff Requirement for Science City

Sl. No.	Designation and Scale of Pay on the basis of 6 th Pay Commission	Grade Pay & Pay Band	No. of Posts
1.	Director (Rs.37,400-67,000)	8700, PB-4	1
2.	Curator (Rs. 15600 – 39100)	5400, PB-3	5
3.	Executive Engineer (Rs. 15600 – 39100)	6600, PB-3	1
4.	Education Assistant (Rs. 5200 – 20200)	2800, PB-1	4
5.	Technical Assistant (Rs. 5200 – 20200)	2800, PB-1	4
6.	Technician (Rs. 5200 – 20200)	1900, PB-1	8
7.	Administrative Officer, (Rs. 15600 – 39100)	6600 PB-3	1
8.	Finance & Accounts Officer (Rs. 15600 – 39100)	5400 PB-3	1
9.	Assistant (Gen) (Rs. 9300 – 34800)	4200, PB-2	8
10.	SPA (Rs. 9300 – 34800)	4600, PB-2	1
11.	Upper Division Clerk (Rs. 5200 – 20200)	2400, PB-1	1
12.	Lower Division Clerk (Rs. 5200 – 20200)	1900, PB-1	8
13.	Driver (Rs. 5200 – 20200)	1900, PB-1	1
Total			44*

* Security, housekeeping, gardening work shall be outsourced; hence staff recruitment for this category has not been projected.

PS: Provision for periodic up-gradation of posts shall be made in recruitment rules to keep motivation of staff high.

IV. Modernization/Up-gradation of existing science cities/science centres under the Science Cities scheme

INTRODUCTION

India has over 50-60 Science Museums/Centres/Cities functioning in different States/UT's. 49 of them have been developed by NCSM since 1959. 25 centres are managed by NCSM and remaining 24 have been handed over to respective States/UT's/Societies for operation and management. Some Science Centres have been developed by State Govt./UT's and are operated and managed by Societies formed by them.

The existing science museums and centres developed in the past are having varying architecture, facilities, content, infrastructure and some of which do not conform to the prevailing trends in the world. With rapid development in science and technology, communication techniques, digital technologies, the Science Centres/cities require modernization/up-gradation commensurate with the modern trends and requirements.

OBJECTIVES

The scheme aims to provide grant/funds to modernize/upgrade and create a flexible contemporary framework that provides a congenial spatial setting for diverse exhibitions/galleries/visitor amenities in the existing science centres/science cities.

ELIGIBILITY CRITERIA:

The Science Centres/Cities who have completed **at least 10 years of operation & have not received any grant under this scheme in last 10 years** shall be eligible for receiving the grant under the scheme.

PRE-REQUISITES FOR APPROVAL BY THE MINISTRY OF CULTURE:

Detailed Project Report (DPR): The Science Centre/Cities desirous to receive the grant from GOVERNMENT OF INDIA shall submit the DPR in the approved format to Ministry of Culture. The DPR shall be evaluated and vetted by NCSM or a committee constituted by Ministry of Culture with representation from NCSM.

FACILITIES TO BE ADDED IN THE MODERNIZATION/UPGRADATION:

The existing science cities/centres may be modernized/up-graded with the following facilities subject to availability of space and spare land within the funds sanctioned under the scheme:

1. Modernization of Galleries/Exhibitions & Halls/Science Parks/visitor's amenities.
2. Addition of galleries on modern Science & Technology and topics related to current Science.
3. Digital panoramic thematic presentations based on important scientific topics as well as on science and culture inter-relationship.
4. Addition of open labs on Frontier Areas of Science & Technology to provide real scientific exploration by the public.

5. Presentations on social issues with scientific solutions after proper contextualization.
6. Addition of virtual and immersive experiences.
7. Creation of new facilities such as Tropical Forests, Outdoor Amphi-Theatre, solar powered park, holography theatre, Hall of Fame to celebrate inventions and inventors, digitally recreated archaeological sites, Spark Theatre, Dark Rides, Simulators, Robotics corner, 3D facility, interpretation centres etc.

P.S.: In no case the funds provided under modernization/Up-gradation scheme shall be utilized for acquiring land/vehicles etc. for the Science Centre/City.

BUDGET:

The actual budget will depend upon facilities identified for up-gradation/modernization. Total estimated cost for implementation for modernization/up gradation of Science City/Centres would be as below.

Category	Total funding for modernization/Up-gradation (Maximum) (Rs. In Crores)	Sharing of Funds between GOI & State Govt./UT Adm./Society	Project/Scheme completion time (Maximum)
Science City	25.00	Will be in the same ratio as has been prescribed in the scheme for setting up of the Science Centres/Cities.	36 months
Science City in NE Region, hilly terrains and island territories.	30.00		36 months
Science Centres (Category I)	5.00		24 months
Science Centres (Category I) in NE region, hilly terrains and island territories.	6.00		24 months
Science Centres (Category II)	2.50		24 months
Science Centres (Category II) in NE region, hilly terrains and island territories.	3.00		24 months

PROJECT IMPLEMENTATION

The project shall normally be undertaken by NCSM on turn-key basis. The funds for the project will be received by NCSM, both from Central Govt. & State Govts./UT's/Societies. NCSM shall take up the modernization/Up-gradation of the Science Centres/Cities on its own or through CMD, a wholly owned section 25 company of NCSM and hand over to the State Govt./UT Adm. /Society after completion. NCSM shall be paid normal consultancy fees for execution of the project. An MOU will be signed between NCSM & State Govt./UT Adm./Society for implementation of the Project.

In case of a State/UT Government or the Societies / Authorities promoted by the State/UT Governments seeking financial support from Government of India for a modernization/Up-gradation project, to be implemented by the concerned Societies formed by the respective State/UT Governments, the project will be vetted and

processed by NCSM for approval of competent authority in Ministry of Culture, Govt. of India and NCSM shall be paid normal consultancy fees for the purpose. In that case funds will be released by Ministry of Culture, Govt. of India to the State Govt./UT or the Societies / Authorities promoted by the State/UT Governments in a phased manner subject to sanction and release of State/UT's share of funds from the respective State/UT Governments and submission of utilization certificate by the State/UT Govt./Societies for the funds released from Government of India and the State Governments/UT/Societies.

MONITORING

Monitoring of modernization/Up-gradation of the Science Centres/Cities set up by State Govt./UT's/Societies shall be done by a committee constituted by Ministry of Culture, Government of India with due representation from the concerned State Govt./UT, NCSM and at least five/three eminent personalities in the fields of S&T, industry, science communication and museology/culture.

STAFF REQUIREMENT FOR SCIENCE CITY

SI No.	Designation and Scale of Pay	Grade Pay & Pay Band	No of posts
1.	Director (Rs.37,400-67,000)	8700, PB-4	1
2.	Curator (Rs. 15600 – 39100)	5400, PB-3	5
3.	Executive Engineer (Rs. 15600 – 39100)	6600, PB-3	1
4.	Education Assistant (Rs. 5200 – 20200)	2800, PB-1	4
5.	Technical Assistant (Rs. 5200 – 20200)	2800, PB-1	4
6.	Technician (Rs. 5200 – 20200)	1900, PB-1	8
7.	Administrative Officer, (Rs. 15600 – 39100)	6600 PB-3	1
8.	Finance & Accounts Officer (Rs. 15600 – 39100)	5400 PB-3	1
9.	Assistant (Gen) (Rs. 9300 – 34800)	4200, PB-2	8
10.	SPA (Rs. 9300 – 34800)	4600, PB-2	1
11.	Upper Division Clerk (Rs. 5200 – 20200)	2400, PB-1	1
12.	Lower Division Clerk (Rs. 5200 – 20200)	1900, PB-1	8
13.	Driver (Rs. 5200 – 20200)	1900, PB-1	1
Total			44*

STAFF REQUIREMENT FOR SCIENCE CENTRE (CATEGORY I)

SI No.	Designation and Scale of Pay & Grade Pay	Grade Pay & Pay Band	No of posts
1.	Curator (Rs. 15600 – 39100)	5400 PB-3	2
2.	Education Assistant (Rs. 5200 – 20200)	2800, PB-1	2
3.	Technical Assistant (Rs. 5200 – 20200)	2800, PB-1	1
4.	Technician (Rs. 5200 – 20200)	1900, PB-1	8
5.	Assistant (Gen) (Rs. 9300 – 34800)	4200, PB-2	1
6.	Upper Division Clerk (Rs. 5200 – 20200)	2400, PB-1	1
7.	Jr. Stenographer (Rs. 5200 – 20200)	2400, PB-1	1
8.	Lower Division Clerk (Rs. 5200 – 20200)	1900, PB-1	2
Total			18*

STAFF REQUIREMENT FOR SCIENCE CENTRE (CATEGORY II)

SI No.	Designation and Scale of Pay & Grade Pay	Grade Pay & Pay Band	No of posts
1.	Curator (Rs.15600-39100)	5400 PB-3	1
2.	Education Assistant (Rs.5200-20200)	2800, PB-1	1
3.	Technician (Rs. 5200 – 20200)	1900, PB-1	4
4.	Lower Division Clerk (Rs. 5200 – 20200)	1900, PB-1	2
Total			8*

* Security, housekeeping, gardening work shall be outsourced; hence staff recruitment for this category has not been projected.

PS: Provision for periodic up-gradation of posts shall be made in recruitment rules to keep motivation of staff high.