



PROPOSAL FOR SETTING UP OF INTEGRATED SCIENCE CENTERS IN SCHOOLS UNDER CSR INITIATIVES

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Submitted By:
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SECTION 1

BRIEF ABOUT EdCIL (INDIA) LTD.

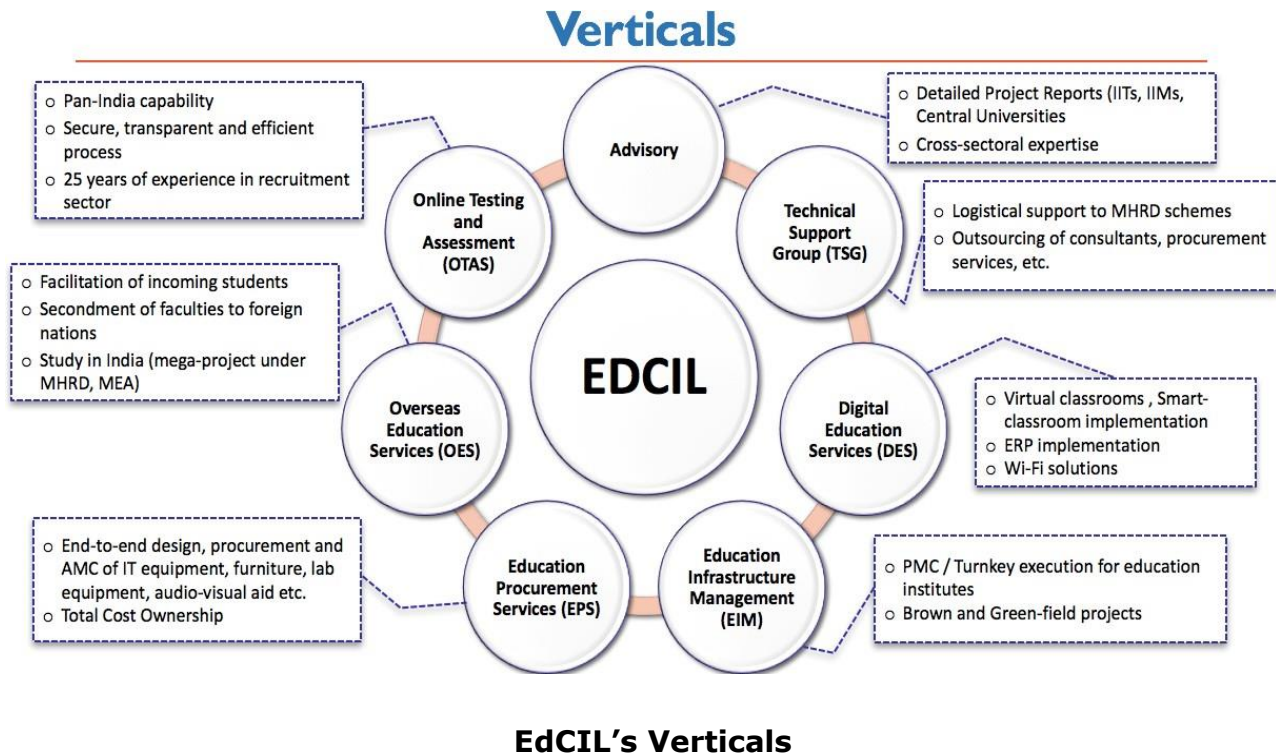
A. ABOUT EdCIL (INDIA) LTD.

EdCIL (India) Limited, is a “Mini Ratna” Central Public Sector Enterprise (CPSE) under the administrative control of the Ministry of Education, Government of India. The company was established in **1981** to offer Project Management and Consultancy Services in the entire education and human resource development value chain within India and overseas. EdCIL is an **ISO 9001:2015 & 14001:2015** Certified Company.

B. EdCIL’s SERVICE SPECTRUM

EdCIL undertakes **end-to-end projects** (educational domain) on turnkey basis from **concept to commissioning** and ensures effective management of activities from identification of objectives through continuous monitoring leading to optimal fulfilment of targets within the stipulated time frame.

EdCIL presently has strong verticals in the following areas:



C. EPS (Educational Procurement Services) Vertical of EdCIL

The vertical provides procurement services, ranging from Furniture, Lab Equipment, IT Equipment and AV (Audio/Video) Equipment etc. on turnkey basis covering the "Preparation of requirements, technical specifications, e-Tendering & Contract Management, Work Award & Monitoring of Installation & commissioning, billing & payments, till the closure of the project and AMC/warranty support for the equipment. Following are the few Major procurement projects on Nomination basis handled in the past:

1. Procurement of furniture, laboratory equipment and other educational aids for **I.K. Gujral Punjab Technical University (IKGPTU)**, Jalandhar, Kapurthala, Punjab;
2. Procurement of Furniture, UPS, Audio-Video and Mess equipment for **Rajiv Gandhi Institute of Petroleum Technology (RGPT)**, Jais, Amethi, UP;
3. **NVS Smart School Project** (Supply of Computers and LCS projects) for Navodaya Vidyalaya Samiti (NVS), New Delhi,
4. Supply of 53000+ Digital Tablets to **Govt. of Mauritius** under Early Digital Learning Program (EDLP) program;
5. Supply of **School Equipment to secondary schools** in Maldives for Government of Maldives,
6. **Supply of Text Books** to Joint Indo Mongolia Secondary Schools, Ulaanbataar, Mongolia;
7. Procurement services for Auditorium building of **Kendriya Hindi Sansthan, Agra**;
8. Supply of Lab equipment, Modular Furniture, Toys & other educational aids at 917 schools across NCT of Delhi, for **Directorate of Education, Government of NCT of Delhi**.
9. Supply of 30,000 Desk-cum-Benches in **Jalalabad, Afghanistan** for Ministry of External Affairs;
10. Up-gradation of Department of Biotechnology, Physics & IT Lab for **Yangon University, Myanmar** for Ministry of External Affairs;
11. Procurement of Machinery and Training Equipment for ITI's West Bengal for **Directorate of Industrial Training**, Govt. of West Bengal.

i. RECENTLY EXECUTED CSR PROJECTS FOR VARIOUS PSUs

1. Supply & Installation of 100 nos. Smart Classroom to Education deptt of Govt. of Rajasthan under **POWERGRID CSR**;
2. Installation, O&M of 100 nos. Smart Classroom solutions in Govt. schools under **BITES CSR** Plan 2019-20.
3. **Impact Assessment Study** of **HPCL** CSR Major Projects for 2018-19.
4. Supply & Installation of **25 Smart classroom** in Dharwad for **SAIL**;
5. Supply & Installation of **22 nos. Smart classrooms** for **NTPC Kahalgaon**;
6. Setting up of **STEM Lab** in 03 Nos. schools for **NTPC, Vindhyachal**;
7. Setting up of **STEM Lab** in 03 no. school for **NTPC, Singrauli**;
8. Setting up of **STEM Lab** in 01 no. school for **NTPC, Solapur**;
9. Setting up of **STEM Lab** in 09 nos. school for **NTPC, Sipat**;
10. Setting up of **STEM Lab** in 05 nos. school for **NTPC, Unchahar**;
11. Setting up of **STEM DIY Lab** in 05 nos. school for **NTPC, Sipat**;
12. Setting up of **STEM DIY Lab** in 01 no. school for **NTPC, Rihand**;
13. Setting up of **Film Based Teaching Methodology Smart classroom** in 06 nos. schools for **NTPC, Tanda**;
14. **Graffiti wall painting** in 13 nos. schools for **NTPC, Barauni**;
15. Supply & Installation of Smart Classroom at Various **NTPC** Units (**Ramagundan, Talchar, Mouda, Sipat, Barh, Farakka, Rihand, Dadri, Simhadri etc.**)
16. EdCIL conducted study for **NTPC** for "Quality of Education in 08 Nos. Schools operating at **Singrauli, Rihandnagar & Vindhyanagar stations** and impact on education after merging of Singrauli Township with Vindhyachal Township;
17. Supply & Installation of **21 Smart Classroom** for **Hindustan Copper Limited**.
18. Preparation of DPR of Industrial Training Institutes (ITIs) at Perumbakkam, Tamil Nadu & Gorakhpur, Uttar Pradesh for **POWERGRID**;
19. Preparation of DPR of Model Library "POWERGRID GYAN KENDRA" for **POWERGRID**;
20. Setting-up of **03 nos. STEM labs** in **NTPC Koldam**.
21. Setting-up of **01 nos. STEM lab** in **NSPCL**.
22. Supply & Installation of Workshop tools & equipment, IT equipment, classroom & workshop furniture, & other items for Industrial Training Institute (ITI), Neyveli for **NLC India Limited**.
23. Procurement under Swachchhta Abhiyan under CSR of **Power Finance Corporation (PFC)**.
24. Setting-up of **64 nos. STEM labs** in **NPCIL Chutka, NPCIL Baswara & NSPCL Kudankulam**.
25. Setting-up of **17 nos. STEM labs** in **NLC Latehar**.
26. **BaLA program** in 02 nos. schools for **NTPC Koldam**.
27. **BaLA program** in 127 nos. schools for **NPCIL Banswara & NPCIL Chutka**.
28. **BaLA program** in 8 nos. schools for **BMC Mumbai**- Ongoing.

29. Setting-up of **Astronomy lab** in 5 nos. schools for **NPCIL Banswara, NPCIL Chutka**.
30. Setting-up of **Astronomy lab** in 51 nos. schools for **BMC Mumbai- Ongoing**.
31. Setting-up of **Tinkering lab** in 9 nos. schools for **NPCIL Banswara & NPCIL Chutka - Ongoing**.

D. OUR CLIENTELE

Since inception of the project till its successful commissioning, the vertical involved a dedicated qualified team for quality services and timely completion. Our major clientele includes none of the less the following.

- Ministry of Education, India;
- Ministry of Education, Mauritius;
- Government of Afghanistan;
- Royal Government of Bhutan;
- University of Mauritius;
- Government of Nepal;
- University Grant Commission (UGC);
- Central University of Himachal Pradesh;
- Central University of Kashmir;
- Central University of Jammu;
- Central University of Karnataka;
- IKGPTU, Jalandhar,
- RGIPT, Amethi,
- IGNOU,
- Indian Institute of Geomagnetism (IIG), Mumbai;
- IIIT Allahabad,
- IIITM Gwalior;
- IIIT Raipur;
- Kendriya Vidyalaya Sanghtan (KVS);
- Navodaya Vidyalaya Samiti (NVS);
- Kendriya Hindi Sansthan, Agra;
- NTPC;
- POWERGRID;
- HPCL;
- SAIL;
- RITES;
- NLC (India) Limited, Neyveli, Tamil Nadu;
- Power Finance Corporation;
- NIMHANS, Bangalore;
- Government of Karnataka;
- Government of Kerala;
- Rustamji Institute of Technology, Tekanpur;
- State project Implementation Unit, West Bengal;
- SPIU, Arunachal Pradesh;
- Odisha Adarsh Vidyalaya Sangathan, Odisha;

SECTION 2

SCOPE OF WORK AND OTHER TERMS & CONDITIONS

A. INTEGRATED SCIENCE CENTER/STEM Lab: TOOL FOR IMPROVING LEARNING OUTCOME

Since education is fundamental to the development and growth of the human capital, it is important to measure its performance beyond the indicators such as enrolment (GER), promotion rates, and dropout rates. It can be seen from the various National Surveys that the performance of the students in the science and mathematics-based subject is not at par with the other subjects. This indicates that there is a scope/need to put the specific efforts for the subjects like Science, Maths etc. for the holistic development of the children. Levers such as STEM (Science, Technology, Engineering & Mathematics) can be proved as basic boosters for transformation of education system. These are the kinds of skills that students develop in science, technology, engineering and math—disciplines collectively known as STEM and is a part of Integrated Science Center.

B. EdCIL's PROPOSAL

In context of the above, to minimize the gaps in understanding the Science & Maths subjects, EdCIL may support the Client to set-up Integrated Science Center for the students from **class 5 to 10** (suitable to NCERT/SCERT curriculum), to make children understand the "basic concepts". Further it is worthwhile to mention that almost every Indian state is facilitating their students by providing the Science & Maths subjects based labs under various Govt. schemes.

i. Integrated Science Center for Basic Understanding

The center will be for understanding of basic principles/concepts of Science & Maths etc. The center shall have plug and play based table top working physical models **(80 Nos.)** are being proposed to make students well understand the basic concepts of science, technology, engineering and mathematics. Along with these 80 Nos. models users placard, colorful backgrounds, safety placard and teachers manual will be provided. Training to teachers for two times in first year is being provisioned for capacity building of teachers. The required set up of platforms & electric connections will also be provided. The Integrated Science Center may also be galaxy painted (optional) as per requirement of the client.

ii. List of proposed Physical Models & Other Services

Sl.	Model's Name	Sl.	Model's Name
1	Constellation Viewer	43	Area of parallelogram
2	Newton's Disc	44	Coupled Pendulum
3	Colour Shadow	45	Solar Light
4	Periscope	46	Wind Mill
5	Kaleidoscope	47	Shape of earth due to rotation

6	Laws of Reflection	48	KE PE Track
7	Corner Mirror	49	Loop The Loop
8	Infinity Well	50	Rope Puzzle
9	Magic Water Tap	51	Refraction Cylinder
10	Total Internal Reflection.	52	Newton's Cradle
11	Fun with Magnets	53	Reflection Transmission
12	Law of Inertia	54	Hand Battery
13	Circle and Ball	55	Day and Night
14	Action and Reaction	56	Cone Run Uphill
15	Parrot in the Cage	57	Tower Of Pisa
16	Zoetrope	58	Lever
17	Pin screen	59	Pulley Blocks
18	Floating Ball	60	Wheel and Axle
19	Floating Fan	61	Heat Absorption
20	Tornado	62	Conductor and Insulators
21	Hand Pump	63	Viscosity Tube
22	Anamorph	64	Rock and Minerals
23	Floating Magnets	65	DNA
24	Magnetic Field Tube & Immiscible Fluid	66	Lateral Shift
25	Moment of inertia	67	Force & types of friction
26	Lazy Tube	68	Funny mirrors
27	Hyperbola	69	Marble Slide
28	Magnetic effect of electric current	70	Resonance
29	Pythagoras Model & Moire Pattern	71	Centrifuge Puzzle
30	Elliptical Carrom Board	72	Area of Trapezium
31	Two Congruent Right Triangles	73	Sum of angles of Quadrilateral
32	Area of a Circle	74	$(A+B)^2 - (A-B)^2 = 4AB$
33	$(a+b)^2 = a^2 + 2ab + b^2$	75	Electric bell
34	$(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$	76	Human Torso
35	$a^2 - b^2 = (a+b)(a-b)$	77	Ear & Eye
36	Sum of the angles of a triangle	78	Human Joints
37	Tangram	79	Plant Cell
38	Parking Puzzle	80	Animal Cell
39	Organ pipes	81	Training of Teachers
40	Area of rhombus	82	Infrastructure
41	Transverse wave pendulum	83	Wall Painting (optional)
42	Area of triangle	84	Base line & Endline Survey

iii. Project Cost

The cost to be incurred towards setting up of one number Integrated Science Center including supply of lab equipment, platforms, teacher training, travel expenses along with the installation & commissioning, galaxy painting (Optional) etc. per lab exclusive of taxes is given below:

Sl.	Description	Unitcost (Rs.)
1.1	Setup of 80 Nos. plug & play physical models along with user's manual, colorful backgrounds, Safety Placard, Teachers' Manual; One-year Comprehensive Warrantee is included in this cost.	654,687
1.2	Teachers Training Program- 02 times in a year (4-5 hour duration for each session);	38,500
1.3	Infrastructural Setup (with 2 ft width MDF Board) along with the Electrical connection with in the center & Installation of the models;	72,800
1.4	Baseline & Endline survey per school including all tour & travel, boarding, lodging etc. for complete project;	38,500
	Total (for 80 Models' center- Class 5 to 10)	804,487
	Total for 01 Integrated Science Center including GST@18%	9,49,295
	Total for 77 Integrated Science Center including GST@18%	7,30,95,715
1.5	Galaxy Wall Painting (optional) <u>per lab</u> excluding GST	1,65,000

iv. Timeline of the Project

The supply & implementation will be completed within 3 months of award of LoA. The comprehensive warrantee period is 1 year and will be started from the date of Installation. Accordingly, Project completion period is 1 year 3 months.

v. Proposed Payment Terms

Sl.	Payment Terms
1.	100% of 1.1 & 1.3 on Completion of Deliveries and Installation;
2.	50% of 1.2 & 50% of 1.4 on completion of 1 st Teacher's Training & Baseline Survey;
3.	Balance on completion of Project warranty period;

vi. CLIENT'S OBLIGATION

However, following are the important **obligations of client** in this regard:

- 1)** Client shall appoint a Nodal person for co-ordination with EdCIL for smooth execution of project.
- 2)** After completion of each stage, EdCIL will seek Client's approval for proceeding for next stage.
- 3)** Client to provide suitable sites (physical space) for storage of equipment / items.
- 4)** Client shall provide the necessary power supplies, water supply, foundations etc. for installation of the equipment, wherever required.
- 5)** Client to issue necessary certificate / forms required for delivery & installation of equipment / items.

The infrastructure would be given by the school/client for setting up of the lab within school premises.

C. GLIMPSES OF EXECUTED INTEGRATED SCIENCE CNETRS / STEM LABS







एनटीपीसी ने स्टैम लैब का किया उद्घाटन

शक्तिनगर। एनटीपीसी विंध्याचल सीएसआर द्वारा शिक्षा के क्षेत्र में अनूठी पहल के तहत स्टैम लैब का उद्घाटन किया गया। कार्यक्रम के प्रारम्भ में मुख्य अतिथि एवं अन्य अतिथियों का विद्यालय के छात्र/छात्राओं द्वारा पुष्पगुच्छ प्रदान कर स्वागत किया गया। मुख्य अतिथि परियोजना प्रमुख विंध्याचल सुभाष चंद नायक ने अपने विचार व्यक्त करते हुए कहा कि सामाजिक दायित्व के तहत शिक्षा के क्षेत्र में स्टैम लैब (साइंस टेक्नोलॉजी इंजीनियरिंग) का उद्घाटन एक नई पहल है। उन्होंने यह भी कहा कि एनटीपीसी, परियोजना के आसपास के क्षेत्र के उत्थान हेतु शिक्षा, स्वास्थ्य एवं आधारभूत संरचना के निर्माण हेतु सदैव तत्पर रहती है और भविष्य में भी परियोजना द्वारा जनकल्याण से संबंधित कार्यों को करने में अपना सहयोग प्रदान करती रहेगी। क्षेत्र की प्रगति के लिए आप सबका सहयोग जरूरी है। विशिष्ट अतिथि के रूप में उपस्थित जिला शिक्षा अधिकारी रोहिणी प्रसाद पांडेय ने एनटीपीसी विंध्याचल द्वारा शिक्षा के क्षेत्र में किए जा रहे कार्यों की भूरी-भूरी प्रशंसा की और भविष्य में भी इसी प्रकार एनटीपीसी विंध्याचल से सहयोग की आशा व्यक्त की। इस अवसर पर मुख्य महाप्रबंधक मानव संसाधन प्रवीर कुमार विश्वास, अपर महाप्रबंधक (मानव संसाधन) स्नेहाशीष भट्टाचार्य, उप महाप्रबंधक(सीएसआर) कन्हैया लाल, उप महाप्रबंधक (मानव संसाधन) कुंदन किशोर, कार्यपालक (सीएसआर) मोहम्मद जुनेद एवं उनकी सीएसआर टीम, प्रधानाचार्य उत्कृष्ट विद्यालय जेके थापर, प्रधानाचार्य शासकीय बालक उच्चतर माध्यमिक विद्यालय श्री राजेंद्र कुमार उपाध्याय के साथ-साथ स्कूल के सभी अध्यापकगण एवं छात्र-छात्राएं उपस्थित रही।

एनटीपीसी विंध्याचल सीएसआर द्वारा शिक्षा के क्षेत्र में अनूठी पहल के तहत स्टैम लैब का किया गया उद्घाटन

अक्षा की अज्ञात भूरी जिला शिक्षा अधिकारी के प्रारम्भ में मुख्य अतिथि एवं अन्य अतिथियों का विद्यालय के छात्र/छात्राओं द्वारा पुष्पगुच्छ प्रदान कर स्वागत किया गया मुख्य अतिथि परियोजना प्रमुख विंध्याचल सुभाष चंद नायक ने अपने विचार व्यक्त करते हुए कहा कि सामाजिक दायित्व के तहत शिक्षा के क्षेत्र में स्टैम लैब (साइंस टेक्नोलॉजी इंजीनियरिंग) का उद्घाटन एक नई पहल है। उन्होंने यह भी कहा कि एनटीपीसी, परियोजना के आसपास के क्षेत्र के उत्थान हेतु शिक्षा, स्वास्थ्य एवं आधारभूत संरचना के निर्माण हेतु सदैव तत्पर रहती है और भविष्य में भी परियोजना द्वारा जनकल्याण से संबंधित कार्यों को करने में अपना सहयोग प्रदान करती रहेगी क्षेत्र की प्रगति के लिए आप सबका सहयोग जरूरी है। विशिष्ट अतिथि के रूप में उपस्थित जिला शिक्षा अधिकारी रोहिणी प्रसाद पांडेय ने एनटीपीसी विंध्याचल

द्वारा शिक्षा के क्षेत्र में किए जा रहे कार्यों की भूरी-भूरी प्रशंसा की और भविष्य में भी इसी प्रकार एनटीपीसी विंध्याचल से सहयोग की आशा व्यक्त की इस अवसर पर मुख्य महाप्रबंधक मानव संसाधन प्रवीर कुमार विश्वास, अपर महाप्रबंधक मानव संसाधन स्नेहाशीष भट्टाचार्य, उप महाप्रबंधक(सीएसआर) कन्हैया लाल, उप महाप्रबंधक (मानव संसाधन) कुंदन किशोर, कार्यपालक (सीएसआर) मोहम्मद जुनेद एवं उनकी सीएसआर टीम, प्रधानाचार्य उत्कृष्ट विद्यालय जेके थापर, प्रधानाचार्य शासकीय बालक उच्चतर माध्यमिक विद्यालय श्री राजेंद्र कुमार उपाध्याय के साथ-साथ स्कूल के सभी अध्यापकगण एवं छात्र-छात्राएं उपस्थित रही।