

ENERGY

Energy Department was established by Government of Punjab in 2011 to enhance Punjab Energy security and fuel economic growth by creating an environment that reliably meet the energy demands of all sectors of Punjab's economy through a sustainable and affordable energy mix and its efficient use. Along with the development of energy program through public sector spending it is working on to attract private sector investment, provide enabling environment and promote energy efficiency and conservation.

The Energy Department has a vision of fully tapping Punjab's indigenous energy resources, including Hydel Power, Solar, Wind, Biomass and Coal. The Department and its attached bodies are fully engaged with the Federal and International entities, and also encouraging the private sector to invest in the power sector.

SECTOR OVERVIEW:

Punjab's power consumption is 68%, with a demand growth of 6-8% per annum. Presently, there is a demand-supply gap of 4000 MW. Punjab is currently facing both electricity and gas load shedding.

Pakistan is currently facing an energy crisis and the province of Punjab, with over a 90 million population, is worst hit. There is great need for creating different institutions and undertaking development projects in public and private sector for energy generation and conservation. Total installed electricity generation capacity of Pakistan is 22,668 MW and Punjab is coping with severe energy shortfalls that have very adversely affected its targets for annual GDP growth for the past many years.

VISION:

To utilize all available resources in the province to provide affordable energy to all segments of provincial economy through increase in generation and conservation of energy to maximize expansion of power generation capacity and infrastructure through participation of public and private sectors.

OBJECTIVES / STRATEGIES:

- Power projects based on cheaper indigenous resources of provinces (including hydel, solar, coal, biomass, wind) and its development strategy.

- Develop project to tap the run of the river/canal hydel potential.
- Promote culture of Energy Conservation.
- Develop enabling Environment for Power generation, sale, purchase & distribution.
- Develop sustainable Energy Mix by introducing appropriate technologies.

ACHIEVEMENTS OF FINANCIAL YEAR 2015-16

- Revision of PC-II, Due Diligence, up-gradation of feasibility study of 135 MW Taunsa Hydel Power Project.
- Establishment of QA Thermal Pvt Ltd for construction of 1000-1200 MW RNLG based Power Plant at Bhikki Sheikhpura.
- Establishment of QA Hydel Pvt Ltd for construction of 135 MW Taunsa Hydel Power Project.
- Solarization of Secretariat, P&D Building.
- Installation of AMI Meters in Government electricity billing.
- Construction of Spur line from Yousaf Wala Railway Station to Sahiwal Coal Power Project.
- Commencement of feasibility study for Bio Mass Power Project.
- Commencement of feasibility study for 5-Mini Hydel Power Project.
- Commencement of Energy Efficiency & Conservation Programme.

NEW INITIATIVES

- Establishment of 135 MW Taunsa Hydel Power Project
- Establishment of 15-20 MW Bio Mass Thermal Power Plant near Chak Jhumra, Faisalabad
- Block Allocation for New Initiatives in Energy Sector for Innovative Power Generation Solution.
- Updation & due diligence of feasibility study of 4.16 MW Okara HPP on LBDC near RD-196
- Updation & due diligence of feasibility study of 3.58 MW HPP on UCC.
- Solar Solutions for BHUs in Punjab.
- Establishment of Labs under Punjab Energy Efficiency & Conservation Programme

TARGETS FOR FINANCIAL YEAR 2016-17

- Completion of Renewable Energy Development Sector Investment Programme hydel power generation project at Marala, Pakpattan, Chianwali, & Degout fall for adding 20 MW Energy to the National Grid.
- Provide enabling environment for private investment to develop Small, Mini & Micro Hydel Power Projects.
- Commencement of RLNG Project for 1000-1200 MW at Bhikki Sharif Sheikhupura
- Commencement of 135 MW Taunsa Hydel Power Project.
- Commencement of 15-20 MW Bio Mass Power Project at Faisalabad.
- Commencement of Energy Resource Centre in Lahore.
- Solar Solutions for BHUs in Punjab

ALLOCATION TRENDS:

(Rs. In Million)

| SR.NO. | YEARS | ALLOCATION |
|--------|---------|------------|
| 1 | 2012-13 | 10,000 |
| 2 | 2013-14 | 20,431 |
| 3 | 2014-15 | 22,000 |
| 4 | 2015-16 | 16,000 |
| 5 | 2016-17 | 8,750 |

OTHER DEVELOPMENT INITIATIVES 2016-17:

- Allocation of funds Rs. 250 million for Construction of Spur Line for Sahiwal Coal Power Project / Quaid-e-Azam Thermal Pvt Ltd. – RLNG based power project.

MTDF 2016-19
Energy : Summary
Development Programme 2016-17

(Million Rs.)

| Sub-Sector | Capital | Revenue | Total | F. Aid | Total |
|-------------------------------|------------------|------------------|------------------|------------------|------------------|
| Ongoing Schemes | 3,585.000 | 1,250.000 | 4,835.000 | 1,015.000 | 5,850.000 |
| Total | 3,585.000 | 1,250.000 | 4,835.000 | 1,015.000 | 5,850.000 |
| New Schemes | | | | | |
| Regular | 250.000 | 650.000 | 900.000 | 0.000 | 900.000 |
| Block | 0.000 | 2,000.000 | 2,000.000 | 0.000 | 2,000.000 |
| Total | 250.000 | 2,650.000 | 2,900.000 | 0.000 | 2,900.000 |
| Other Development Initiatives | 0.000 | 250.000 | 250.000 | 0.000 | 250.000 |
| Total (ongoing+new) | 3,835.000 | 4,150.000 | 7,985.000 | 1,015.000 | 9,000.000 |

Development Programme 2017-18

| | | | | | |
|-------------------------------|------------------|------------------|------------------|--------------|------------------|
| Ongoing Schemes | | | | | |
| Regular | 5,060.000 | 1,375.000 | 6,435.000 | 0.000 | 6,435.000 |
| Total | 5,060.000 | 1,375.000 | 6,435.000 | 0.000 | 6,435.000 |
| New Schemes | | | | | |
| Regular | 275.000 | 715.000 | 990.000 | 0.000 | 990.000 |
| Block | 0.000 | 2,200.000 | 2,200.000 | 0.000 | 2,200.000 |
| Total | 275.000 | 2,915.000 | 3,190.000 | 0.000 | 3,190.000 |
| Other Development Initiatives | 0.000 | 275.000 | 275.000 | 0.000 | 275.000 |
| Total (ongoing+new) | 5,335.000 | 4,565.000 | 9,900.000 | 0.000 | 9,900.000 |

Development Programme 2018-19

| | | | | | |
|----------------------------------|------------------|------------------|-------------------|--------------|-------------------|
| Ongoing Schemes | | | | | |
| Regular | 5,565.000 | 1,515.000 | 7,080.000 | 0.000 | 7,080.000 |
| Total | 5,565.000 | 1,515.000 | 7,080.000 | 0.000 | 7,080.000 |
| New Schemes | | | | | |
| Regular | 300.000 | 790.000 | 1,090.000 | 0.000 | 1,090.000 |
| Block | 0.000 | 2,420.000 | 2,420.000 | 0.000 | 2,420.000 |
| Total | 300.000 | 3,210.000 | 3,510.000 | 0.000 | 3,510.000 |
| Other Development Initiatives | 0.000 | 300.000 | 300.000 | 0.000 | 300.000 |
| Total (ongoing+new) | 5,865.000 | 5,025.000 | 10,890.000 | 0.000 | 10,890.000 |
| MTDF 2016-19: Grand Total | | | | | 29,790.000 |

ENERGY: SUMMARY

(Million Rs.)

| Type / Sub Sector | No. of Schemes | Provision for 2016-17 | | | | Projection for 2017-18 | Projection for 2018-19 |
|---|----------------|-----------------------|------------------|------------------|--------------------|------------------------|------------------------|
| | | Capital | Revenue | Foreign Aid | G. Total (Cap+Rev) | | |
| <u>ON-GOING SCHEMES</u> | | | | | | | |
| Regular | 5 | 3,585.000 | 1,250.000 | 1,015.000 | 5,850.000 | 230.000 | 0.000 |
| Total: ON-GOING SCHEMES | 5 | 3,585.000 | 1,250.000 | 1,015.000 | 5,850.000 | 230.000 | 0.000 |
| <u>NEW SCHEMES</u> | | | | | | | |
| Regular | 7 | 250.000 | 2,650.000 | 0.000 | 2,900.000 | 3,700.000 | 930.000 |
| Total: NEW SCHEMES | 7 | 250.000 | 2,650.000 | 0.000 | 2,900.000 | 3,700.000 | 930.000 |
| Total: ADP | 12 | 3,835.000 | 3,900.000 | 1,015.000 | 8,750.000 | 3,930.000 | 930.000 |
| <u>OTHER DEVELOPMENT PROGRAMME</u> | | | | | | | |
| ODP | 1 | 0.000 | 250.000 | 0.000 | 250.000 | 0.000 | 0.000 |
| Total: OTHER DEVELOPMENT PROGRAMME | 1 | 0.000 | 250.000 | 0.000 | 250.000 | 0.000 | 0.000 |
| Grand Total | 13 | 3,835.000 | 4,150.000 | 1,015.000 | 9,000.000 | 3,930.000 | 930.000 |

ENERGY

(Million Rs.)

| GS No | Scheme Information Approval Date / Location | Est. Cost | Accum. Exp June,16 | Provision for 2016-17 | | | MTDF Projections | | Throw fwd Beyond June, 2019 |
|-------|--|-----------|--------------------|-----------------------|-----|--------------------|------------------|---------|-----------------------------|
| | | | | Cap | Rev | G. Total (Cap+Rev) | 2017-18 | 2018-19 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

ON-GOING SCHEMES

Regular

| | | | | | | | | | |
|--------------------------------|--|-------------------|------------------|------------------|------------------|------------------|----------------|--------------|--------------|
| 3915 | PC-II, Feasibility Study Consultancy for Bio-Mass based Power Plant setup near wheat & rice producing areas of Punjab, Faisalabad 24-12-2014 Faisalabad | 104.050 | 15.050 | 0.000 | 89.000 | 89.000 | 0.000 | 0.000 | 0.000 |
| 3916 | Reconciliation of government electricity billing by installing AMI meters (pilot project) 29-08-2014 Punjab | 152.235 | 16.235 | 0.000 | 136.000 | 136.000 | 0.000 | 0.000 | 0.000 |
| 3917 | Energy Efficiency & Conservation Programme 07-09-2015 Punjab | 1,205.000 | 0.000 | 0.000 | 975.000 | 975.000 | 230.000 | 0.000 | 0.000 |
| 3918 | Renewable Energy Development Sector Investment Programme REDSIP 2008 Sialkot, Gujranwala, Sahiwal, Sheikhpura | 10,803.000 | 7,610.690 | 4,600.000 | 30.000 | 4,630.000 | 0.000 | 0.000 | 0.000 |
| | | | | Local: | 3,585.000 | 30.000 | | | |
| | | | | Foreign: | 1,015.000 | 0.000 | | | |
| 3919 | Feasibility Study for 5-Mini Hydro Power Sites 10-03-2016 Sialkot, Gujranwala, Chakwal | 20.000 | 0.000 | 0.000 | 20.000 | 20.000 | 0.000 | 0.000 | 0.000 |
| Sub-Total: Regular | | 12,284.285 | 7,641.975 | 4,600.000 | 1,250.000 | 5,850.000 | 230.000 | 0.000 | 0.000 |
| Total: ON-GOING SCHEMES | | 12,284.285 | 7,641.975 | 4,600.000 | 1,250.000 | 5,850.000 | 230.000 | 0.000 | 0.000 |

NEW SCHEMES

Regular

| | | | | | | | | | |
|---------------------------|---|------------------|--------------|----------------|------------------|------------------|------------------|----------------|--------------|
| 3920 | Establishment of 15-20 MW Bio Mass Thermal Power Plant near Chak Jhumra, Faisalabad Un-Approved Faisalabad | 3,000.000 | 0.000 | 0.000 | 250.000 | 250.000 | 2,000.000 | 750.000 | 0.000 |
| 3921 | Due Diligence & updation of feasibility study of 4.16 MW Okara HPP on LBDC near RD-196 Un-Approved Lahore | 20.000 | 0.000 | 0.000 | 20.000 | 20.000 | 0.000 | 0.000 | 0.000 |
| 3922 | Construction of Energy Resource Centre Un-Approved Lahore | 600.000 | 0.000 | 250.000 | 0.000 | 250.000 | 350.000 | 0.000 | 0.000 |
| 3923 | Reconciliation of government electricity billing by installing AMI meters (2nd phase) Un-Approved Punjab | 290.000 | 0.000 | 0.000 | 60.000 | 60.000 | 150.000 | 80.000 | 0.000 |
| 3924 | Due Diligence & updation of feasibility study of 3.58 MW HPP on UCC Un-Approved Punjab | 20.000 | 0.000 | 0.000 | 20.000 | 20.000 | 0.000 | 0.000 | 0.000 |
| 3925 | Solar Solutions for BHUs in Punjab Un-Approved Punjab | 1,600.000 | 0.000 | 0.000 | 300.000 | 300.000 | 1,200.000 | 100.000 | 0.000 |
| 3926 | Energy Development Fund. Un-Approved Punjab | 2,000.000 | 0.000 | 0.000 | 2,000.000 | 2,000.000 | 0.000 | 0.000 | 0.000 |
| Sub-Total: Regular | | 7,530.000 | 0.000 | 250.000 | 2,650.000 | 2,900.000 | 3,700.000 | 930.000 | 0.000 |
| Total: NEW SCHEMES | | 7,530.000 | 0.000 | 250.000 | 2,650.000 | 2,900.000 | 3,700.000 | 930.000 | 0.000 |

ENERGY

(Million Rs.)

| GS No | Scheme Information Approval Date / Location | Est. Cost | Accum. Exp June,16 | Provision for 2016-17 | | | MTDF Projections | | Throw fwd Beyond June, 2019 |
|-------------------|--|------------|-----------------------|-----------------------|-----------|-----------------------|------------------|---------|-----------------------------------|
| | | | | Cap | Rev | G. Total (Cap+Rev) | 2017-18 | 2018-19 | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| Total: ADP | | 19,814.285 | 7,641.975 | 4,850.000 | 3,900.000 | 8,750.000 | 3,930.000 | 930.000 | 0.000 |

OTHER DEVELOPMENT PROGRAMME

ODP

| | | | | | | | | | |
|---|--|------------|-----------|-----------|-----------|-----------|-----------|---------|-------|
| 3927 | Construction of Spurline for Sahiwal Coal Power Project / Quaid-e-Azam Thermal Pvt. Ltd. - RLNG Based Power Project. Punjab | 250.000 | 0.000 | 0.000 | 250.000 | 250.000 | 0.000 | 0.000 | 0.000 |
| Sub-Total: ODP | | 250.000 | 0.000 | 0.000 | 250.000 | 250.000 | 0.000 | 0.000 | 0.000 |
| Total: OTHER DEVELOPMENT PROGRAMME | | 250.000 | 0.000 | 0.000 | 250.000 | 250.000 | 0.000 | 0.000 | 0.000 |
| Grand Total | | 20,064.285 | 7,641.975 | 4,850.000 | 4,150.000 | 9,000.000 | 3,930.000 | 930.000 | 0.000 |