



LEPE SERVICES (INDIA) PRIVATE LIMITED

LEPAY SERVICES SDN.BHD.

“LEPAY ENERGY”



Introduction

Lepay Services Sdn. Bhd. is a Malaysian Software Trading and Technology company, which is run by its Indian Director Mr. Suresh.

Now as a part of the further expansion of the business, Lepad is planning to enter the energy production sector, and the new service called “Lepad Energy” will be established under the services of its parent company, Lepad Services Sdn. Bhd.

By definition, renewable energy is derived from natural resources such as sunlight, wind, water, rain, tides, geo-thermal heat, bio-mass and other sources that can be replenished constantly to generate electricity and power.

Energy Sources in Malaysia



TIDAL



WIND



SOLAR



NUCLEAR



BIOMASS



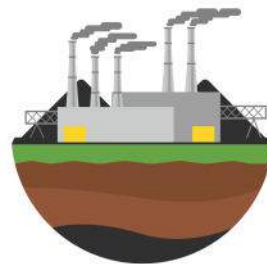
WAVE



HYDROELECTRIC



GEOTHERMAL



COAL

The demand for energy is growing day by day, with countries around the world pushing for a greater dependence on various power sources. To achieve these goals, many revolutionary projects have been constructed on massive scales, utilizing innovative techniques to generate unprecedented amounts of energy.

Now, when it comes to Malaysia, most of its electricity generation capacity is natural gas-fired and coal, but the government is seeking to achieve a more balanced portfolio of electricity generation over the coming years to meet its growing demand and reduce its dependency on fossil fuels. This has benefited Malaysia's hydropower sector, which has in the past largely been concentrated in Peninsular Malaysia, but due to its high rainfall and geography, the state of Sarawak on the island of Borneo is expected to experience the lion's share of new developments.

Keeping the nation's interest in mind, the Malaysian government relentlessly pursued its ultimate objective of power generation. Since then, two pieces of legislation were passed to replace the existing Electricity act, and to provide for the establishment of a new corporation – TENAGA NASIONAL BERHAD (TNB). Since then TNB became a private company wholly-owned by the government. In pursuit of renewable energy sources, Tenaga Nasional Berhad (TNB) today invests in not only conventional power plants powered by gas, coal and diesel, but we have also made significant inroads in relation to employing other power producing alternatives.

Tenaga Nasional Berhad (TNB)

Tenaga Nasional Berhad (TNB) is the largest electricity utility in Malaysia and a leading utility company in Asia. Listed on the Main Board of Bursa Malaysia with almost RM87 billion in assets, the Company's more than 33,500 employees serve an estimated 8.3 million customers in Peninsular Malaysia, Sabah and Labuan. TNB has been supplying electricity in Malaysia ever since 1949 as the it was set up as the Central Electricity Board.



TNB is committed to support the national green agenda and minimize the environmental impact of our business by applying sustainable, efficient operations and delivering green energy through the application of appropriate technologies and investments. TNB's core businesses are in the generation, transmission and distribution of electricity. In Peninsular Malaysia, the Company supplies households and industry with electricity generated from six thermal stations and three major hydroelectric schemes. It also manages and operates the National Grid which links TNB power stations and IPPs to the distribution network. The grid is connected to Thailand's transmission system in the north and Singapore's transmission system in the south. In East Malaysia, TNB has an 80% equity in Sabah Electricity Sdn. Bhd. (SESB), which manages the Sabah Grid.

TNB also introduces new features in the Electricity Tariff in the period 2018-2020.

- More efficient and reliable electricity supply at the lowest efficient cost and increasing the productivity for the sake of customer satisfaction.
- Enhancement in safety and reliability with smart grid capabilities.
- Supporting government's initiatives in green energy and sustainability for example AMI, Distribution automation, Group Re-lamping of Streetlight, etc.



Other than its core business, TNB has diversified into the manufacture of transformers, high voltage switchgears and cables; the provision of professional consultancy services; and architectural, civil, electrical engineering works and services, repair and maintenance. The Company also engages in research and development, property development and management services. Tapping into opportunities available overseas, TNB is making inroads into emerging markets, focusing on the Asia-Pacific, Middle East and North Africa regions. It's good to know that any kind of connection to the national grid, from any of these renewable energy installations, requires prior approval from Tenaga Nasional Berhad.

Companies Under TNB

So far, TNB dealt with 22 subsidiary companies such as TNB Engineering Corp. Sdn. Bhd., TNB Fuel Services Sdn. Bhd., TNB Fuel Services Sdn. Bhd., TNB Repair and Maintenance Sdn. Bhd., TNB Energy Services Sdn. Bhd., TNB Capital (L) Ltd, TNB Coal International Limited, etc.

TNB Energy Services SDN. BHD.

Out of the 22, TNB Energy Services Sdn. Bhd. is one such subsidiary company. TNB Energy Services is a wholly owned subsidiary of Tenaga Nasional Berhad specializing in Renewable Energy, Energy Efficiency, Rural Electrification, Green Technology and Consultancy & Services. They provide services in term of consultancy, development & maintenance.

Projects Handled

TNB Energy Services Sdn. Bhd. successfully handled and completed a total of 14 projects between the years 2002–2012.

The following are the projects and their specifications:

1. **SHS at Gunung Machincang, Langkawi**
 - 16 kwatt peak of solar power to serve cable car office
2. **SHS Kg. Denai, Rompin, Pahang**
 - 10 kwatt peak of solar power to supply 20 houses
3. **SHS Mersing islands, Johor (Phase 1)**
 - 6 SHS, 65 kwatt peak of solar power to supply 215 houses
4. **Pulau Toba Power plant**
 - 3 x 200kW generator system
 - 600 kwatt to supply 620 houses
5. **SHS Mersing islands, Johor (Phase 2)**
 - 2 SHS
 - 30 kwatt peak of solar power to supply 60 houses
6. **SHS P. Perhentian**
 - 100 kwatt peak of solar power and 200kw wind power to serve:
 - ✦ 280 domestics customers
 - ✦ 3 commercial customers and
 - ✦ 22 chalet operators
7. **SHS P. Kapas**
 - 100 kwatt peak of solar power to supply 8 resorts (116 rooms)
8. **SHS Org Asli Perak, Johor, Kelantan, Pahang (Phase 1 & 2)**
 - 11 SHS, 176 kwatt peak of solar power to supply 744 houses
9. **SHS Banggi**
 - 200 kwatt peak of solar epower to supply 402 consumers inclusive houses, mosque, government office, clinic and schools
10. **SHS for remote schools, Sabah**
 - 4 SHS, 80 kwatt peak of solar power to supply 4 schools
11. **SHS Sabah**
 - 6 SHS, 105 kwatt peak of solar power
12. **SHS Kalabakan**
 - 250 kwatt peak of solar power to supply 591 houses
13. **SHS remote schools in Perak, Kelantan, Pahang and Johor**
 - 19 SHS, 735 kwatt peak of solar power to supply 19 schools
14. **SHS RPS Kemar, Gerik, Perak**
 - 850 kwatt peak of solar electricity power to supply 342 consumers inclusive houses, mosque, government office, clinic, and schools



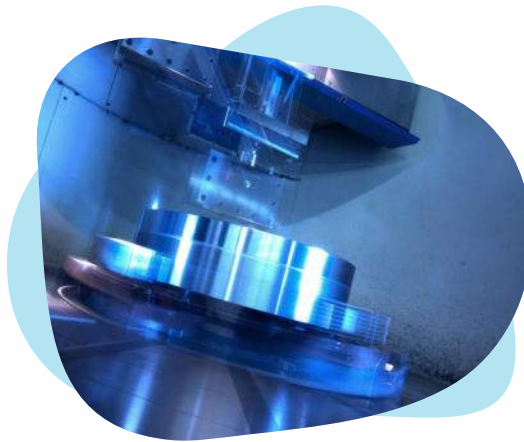
Lepay Energy

Hence, Lepad Energy aims at producing energy, primarily in Malaysia and secondarily to other countries, in future. Lepad Energy is interested in power generation, with the help of the Flywheel concept, as mentioned earlier, in collaboration with the TNB.

For collaborating with TNB and handling this energy generation project, we need the approval and authorization from TNB, so that Lepad Energy will be able to setup its project in Malaysia.

Lepad Energy has also planned of providing 5% royalty to the Founder of Flywheel Energy Generation, in India, who owns the patent rights for this technology.

Flywheel Energy Storage (FES)



Now let's see how the concept of energy generation and storage of energy is done in "Flywheel". Flywheel Energy Storage (FES) technology works by accelerating a flywheel to a very high speed and maintaining the energy in the system as rotational energy. Most FES system uses electricity to accelerate the flywheel. Flywheel Energy Storage is a new concept that is being used to overcome the limitations of intermittent energy supply. A FES system is described as a mechanical battery, it does not create electricity it simply converts and stores the kinetic energy. The flywheel rotates in frictionless magnetic levitated environment which has very low energy loss over time. Flywheels are relatively simple technology as compared to counterpart such as rechargeable batteries in terms of initial cost, ongoing maintenance, environmental friendly and are very quick to get up to the speed.

Flywheels of various forms have been used in industry for hundreds of years, both first generation (iron or steel) and second generation (composite) flywheels are now used for electricity storage. In flywheel, the rim is attached by spokes or a hub to a central shaft, which is supported by bearings. When the person rotates the wheel manually, the rotational motion of flywheel is transferred to the dc generator shaft through belt. The rotor consist of armature winding i.e.; armature conductors.

Flywheel Energy Storage Via Dynamo / Generator

The FESS is made up of a heavy rotating part, the flywheel, with an electric dynamo or generator. The inbuilt motor uses electrical power to turn at high speeds to set the flywheel turning at its operating speed. This results in the storage of kinetic energy. When energy is required, the motor functions as a generator, because the flywheel transfers rotational energy to it. This is converted back into electrical energy, thus completing the cycle.

As the flywheel spins faster, it experiences greater force and thus stores more energy. Flywheels are thus showing immense promise in the field of energy storage systems designed to replace the typical lead-acid batteries. Hence rotor starts rotating with the same speed as that of geared wheel. As rotational velocity increases, the rotor experience increasing radial force causing it expand faster than the shaft. The spoke or hub assembly must compensate for this differential growth while maintaining a secure bound with the rim. Then in accordance with the principle of electromagnetic induction, current starts flowing in the rotor of dc generator. The output so obtained is in dc form. Now we can store this dc output in battery to supply dc operated instrument as well.

Humidity has yet size the true potential of flywheel when spun up to very high speed a flywheel becomes a reservoir for a massive amount of kinetic energy, which can be stored or drawn back at will. The capabilities of such device are as extraordinary as its unique design. The device is one of the humidity's oldest and most familiar technologies. It was in the potter wheel 6000 years ago as a stone tablet with enough mass to rotate smoothly. Human power self generator provides and occupy less space than other renewable. Overall from this project it is explain better utilization of human power result in a efficient power generation. Thus usage of flywheel will reduce the loss of rotational energy by storage of maximum energy in it.

Flywheel energy storage unit (FESU) can supply immediate active power support for a renewable energy based micro-grid. It has numerous merits such as high power density, high conversion efficiency and long life-span. In the past few decades, it has been used in uninterruptible power supplies where the short-duration power changes reduce the battery lifetime. In the context of autonomous energy production, flywheels are used in the field of transportation and in space applications for energy transfer and, particularly, to stabilize or drive satellites (gyroscopic effect). Flywheel energy storage is characterized by its long lifetime (typically 20 years).

To prevent the influence of gravity, the disk in flywheel ESS is built in perpendicular position of the rotor. Flywheels can be charged by electric motors when there is excessive electricity. It can also act as a generator when discharging. Due to the existence of friction, eventually flywheels will lose some energy. Hence, minimizing friction can help to improve their efficiency. This goal can be realized through two approaches: the first one is to make a vacuum environment for the flywheel to spin in, ensuring there will be no air resistance. The second approach is to install a permanent magnet or electromagnetic bearing to make the spinning rotor float. The spinning speed of modern flywheel energy storage system can reach up to 16,000 rpm with a capacity of up to 25 kWh.

Flywheels have low maintenance costs, and their life-span can be long. There is no greenhouse emission or toxic material produced when flywheels are working, so it is very environment friendly. The response time is very short. The drawbacks of flywheels are the small capacity and high power loss, ranging from 3% to 20% per hour.

Although flywheel energy storage is being integrated in the energy market at slow pace, flywheel ES is considered as a very interesting technology. It is one of the first mechanical storage methods. Flywheel ES uses kinetic energy as a form of storage. This technology has many advantages such as its high efficiencies ranging from 90% to 95%, its long-life cycles and long lifetime (15– 20 years). Issues associated with this storage technology include the high capital cost of \$1000– \$5000/kWh and the high self-discharge rates that can go from 50% up to 100%. Therefore, flywheel storage can be used especially for large storage capacities. In addition, because of its high self-discharge rates, this technology can be seen as effective only when storing energy for short periods of time. It is also used to regulate current fluctuations in power output from RE sources.

Modern flywheels use rotors made of composite materials that are capable of spinning at 100,000 rpm, or higher. Some also use massive metal rotors but the rotational speed of these is limited by their ability to resist the high centrifugal forces. To keep energy losses to a minimum, most flywheels use magnetic bearings and operate in a vacuum chamber. In energy storage terms, a flywheel is a relatively small device but it can deliver a large amount of energy in a short space of time. This makes them useful for grid support and backup supply ride-through support during grid outages.



Conclusion

Lepay Energy aims for the ultimate production of energy with efficiently developed technology and effectively low cost. It will primarily focus on Malaysia and its people and their satisfaction.

The idea of energy generation through flywheel might be complex one at present, because of its acute popularity. But in future, flywheel will gain its importance and popularity amongst the peers and competitors.

Lepay Services Sdn. Bhd. under the name of Lepad Energy will start developing such new ideas and concepts in and around Malaysia, which will benefit the people's lives within a short span of time.

Lepad Energy
By
Lepad Services SDN. BHD.





Lepay Energy SDN. BHD.

Required Documents to be Submitted for Investor in Lepay Energy

- ⚡ **Cancelled Cheque Leaf**
- ⚡ **Pan Card**
- ⚡ **Aadhar Card**
- ⚡ **One Compulsory Nominee**
- ⚡ **Nominee's Aadhar**

*** Payment should be made through Karur Vysya Bank at any branch

Lepay Services SDN. BHD.

Lepay Energy Incentive Table

Investment Amount (One-time)	Receivable Incentive per month	Total Incentive receivable for 1 year (12 months)	Total Incentive receivable for 3 years (36 months)
₹ 1,00,000.00	₹ 1,500.00	₹ 18,000.00	₹ 54,000.00
₹ 2,00,000.00	₹ 3,000.00	₹ 36,000.00	₹ 1,08,000.00
₹ 3,00,000.00	₹ 4,500.00	₹ 54,000.00	₹ 1,62,000.00
₹ 4,00,000.00	₹ 6,000.00	₹ 72,000.00	₹ 2,16,000.00
₹ 5,00,000.00	₹ 7,500.00	₹ 90,000.00	₹ 2,70,000.00
₹ 6,00,000.00	₹ 9,000.00	₹ 1,08,000.00	₹ 3,24,000.00
₹ 7,00,000.00	₹ 10,500.00	₹ 1,26,000.00	₹ 3,78,000.00
₹ 8,00,000.00	₹ 12,000.00	₹ 1,44,000.00	₹ 4,32,000.00
₹ 9,00,000.00	₹ 13,500.00	₹ 1,62,000.00	₹ 4,86,000.00
₹ 10,00,000.00	₹ 15,000.00	₹ 1,80,000.00	₹ 5,40,000.00
₹ 11,00,000.00	₹ 16,500.00	₹ 1,98,000.00	₹ 5,94,000.00
₹ 12,00,000.00	₹ 18,000.00	₹ 2,16,000.00	₹ 6,48,000.00
₹ 13,00,000.00	₹ 19,500.00	₹ 2,34,000.00	₹ 7,02,000.00
₹ 14,00,000.00	₹ 21,000.00	₹ 2,52,000.00	₹ 7,56,000.00
₹ 15,00,000.00	₹ 22,500.00	₹ 2,70,000.00	₹ 8,10,000.00
₹ 16,00,000.00	₹ 24,000.00	₹ 2,88,000.00	₹ 8,64,000.00
₹ 17,00,000.00	₹ 25,500.00	₹ 3,06,000.00	₹ 9,18,000.00
₹ 18,00,000.00	₹ 27,000.00	₹ 3,24,000.00	₹ 9,72,000.00
₹ 19,00,000.00	₹ 28,500.00	₹ 3,42,000.00	₹ 10,26,000.00
₹ 20,00,000.00	₹ 30,000.00	₹ 3,60,000.00	₹ 10,80,000.00



Mr. SURESH
Director
LEPAY SERVICES SDN. BHD.

For any enquiries call:

Mr. Govindan
Admin Director
☎ +91 90425 83812
✉ amindirector@lepay.in



GROUP OF COMPANIES

LEPE SERVICES (INDIA) PVT. LTD.

263A, A2 Block, Aarthy Towers,
Velachery Main Road,
Tambaram East, Chennai - 600 059.

LEPAY SERVICES SDN. BHD., MALAYSIA

Unit 07-05, Level 7, Block 3B Bay Point,
Persiaran Danga, Perdana Country Garden,
Danga Bay, Johor Bahru, 80200 Johor, Malaysia.

LEPAY ENERGY SDN. BHD., MALAYSIA

Level 17, Menara Landmark,
No.12, Jalan Ngee, 80000 Johor Bahru, Malaysia.

LEPAY EDUCATION INVESTMENT

263A, A1 Block, Aarthy Towers,
Velachery Main Road,
Tambaram East, Chennai - 600 059.

LECARE

263A, A2 Block, Aarthy Towers,
Velachery Main Road,
Tambaram East, Chennai - 600 059.

SUYAMBU NADAR PERIYAMUTHARU AMMAL TRUST

TF2, A1 Block, Aarthy Towers, Velachery Main Road,
Tambaram East, Chennai - 600 059.