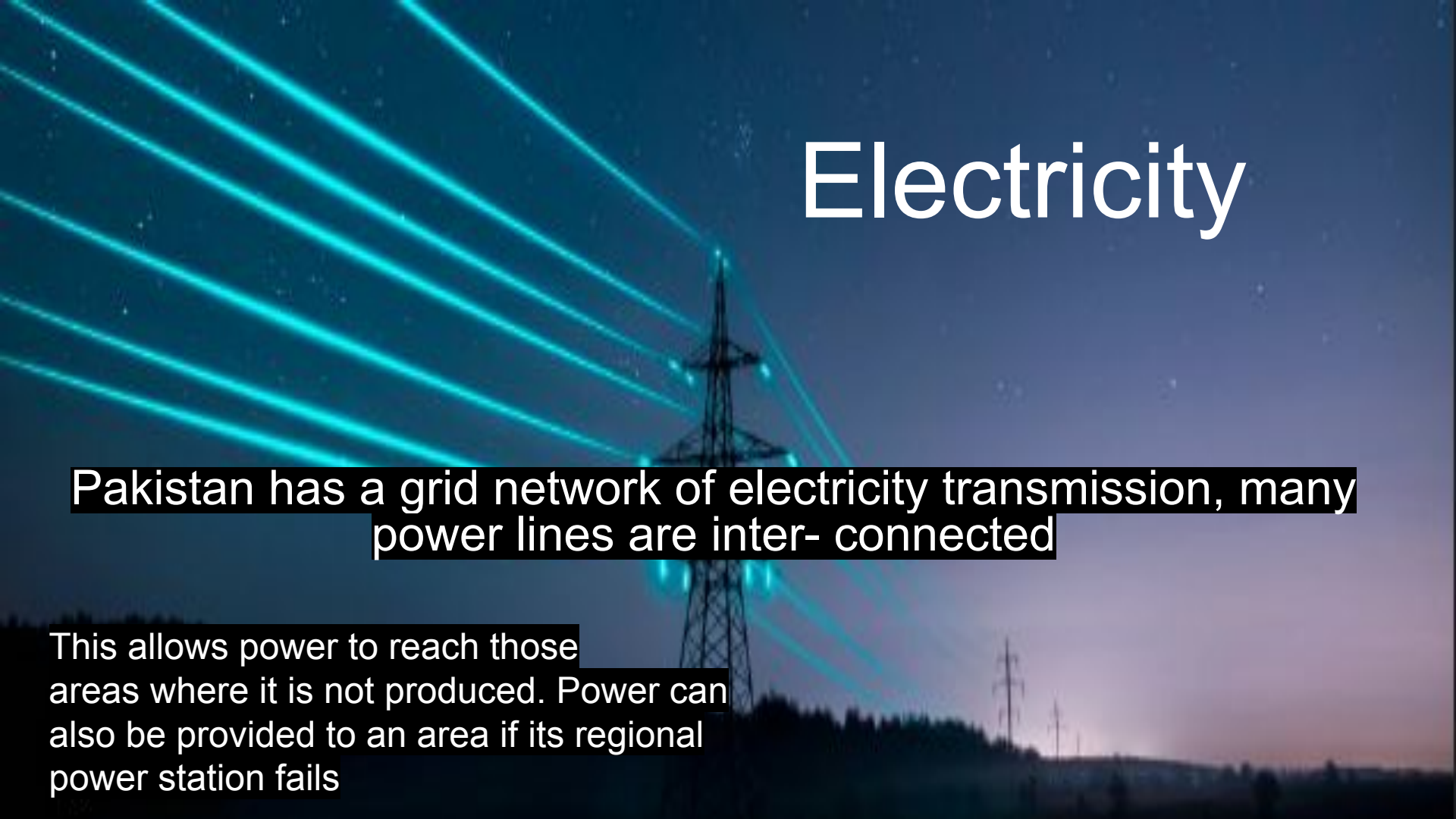
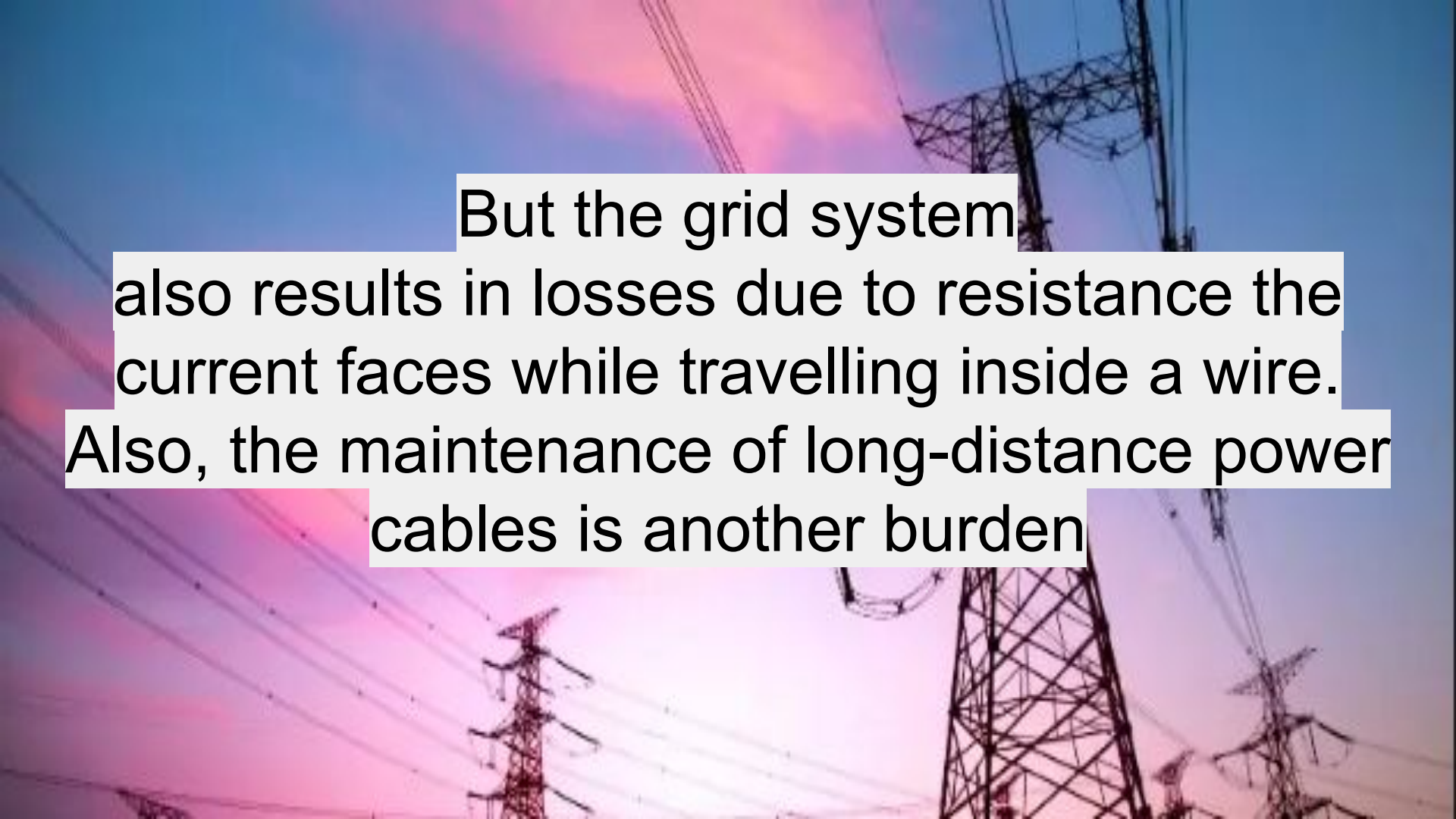
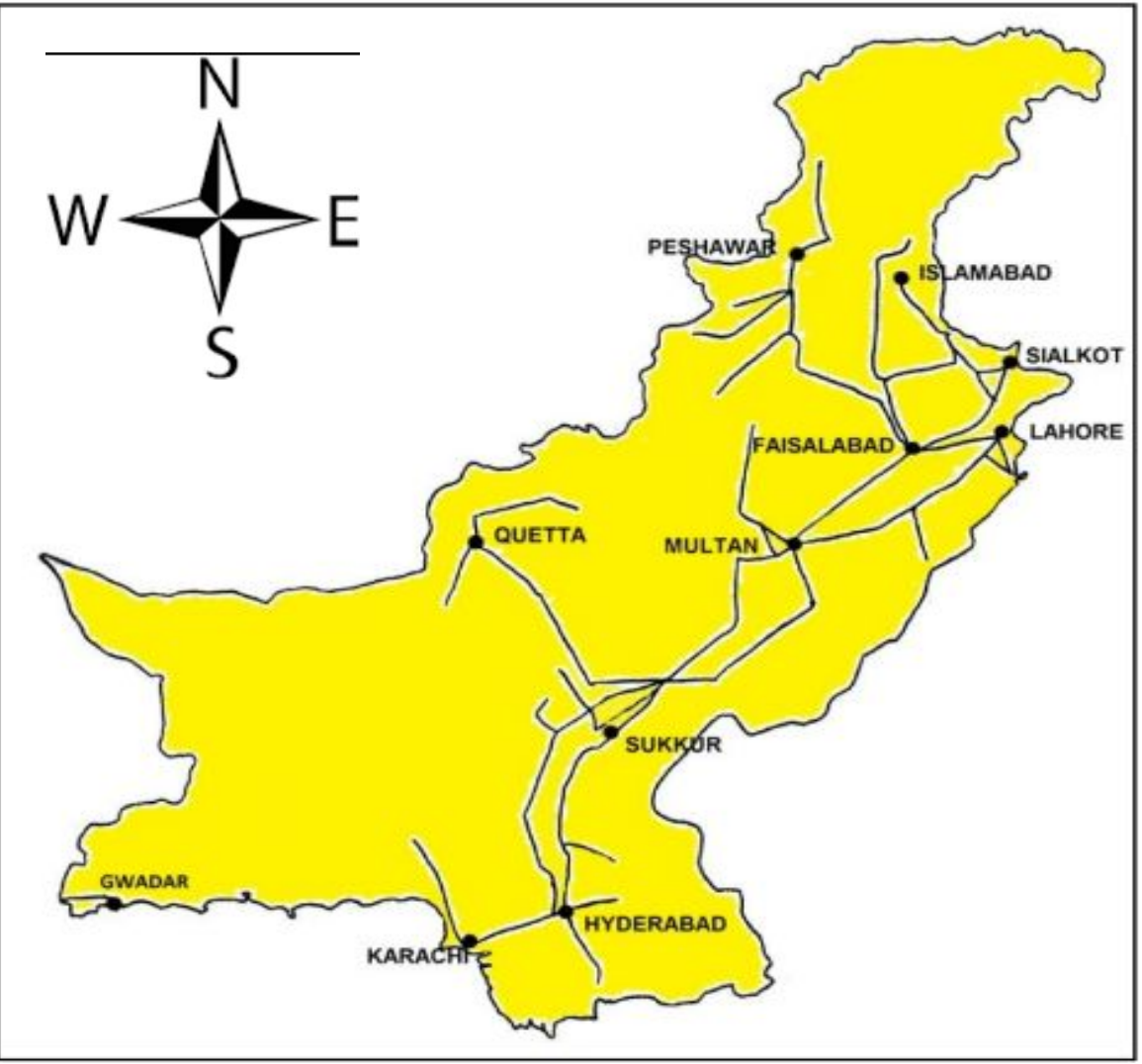


Electricity

Pakistan has a grid network of electricity transmission, many power lines are inter- connected

This allows power to reach those areas where it is not produced. Power can also be provided to an area if its regional power station fails

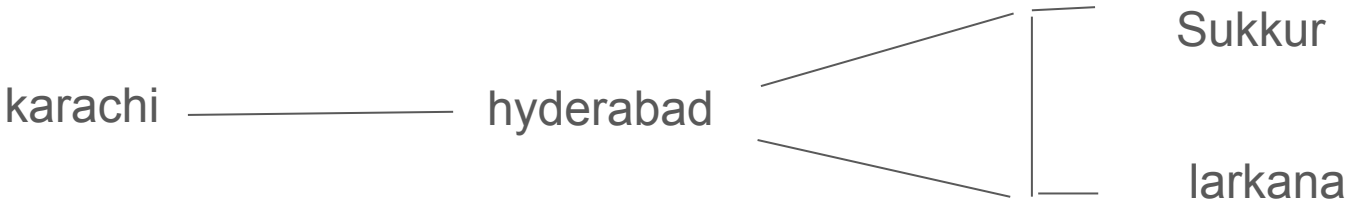

But the grid system
also results in losses due to resistance the
current faces while travelling inside a wire.
Also, the maintenance of long-distance power
cables is another burden



Powerlines in Pakistan

SINDH

The power lines run from Karachi connecting the nuclear power station there with Hyderabad. From there the lines start running on both banks of Indus and connect cities like Sukkur, Hyderabad, larkana etc



PUNJAB

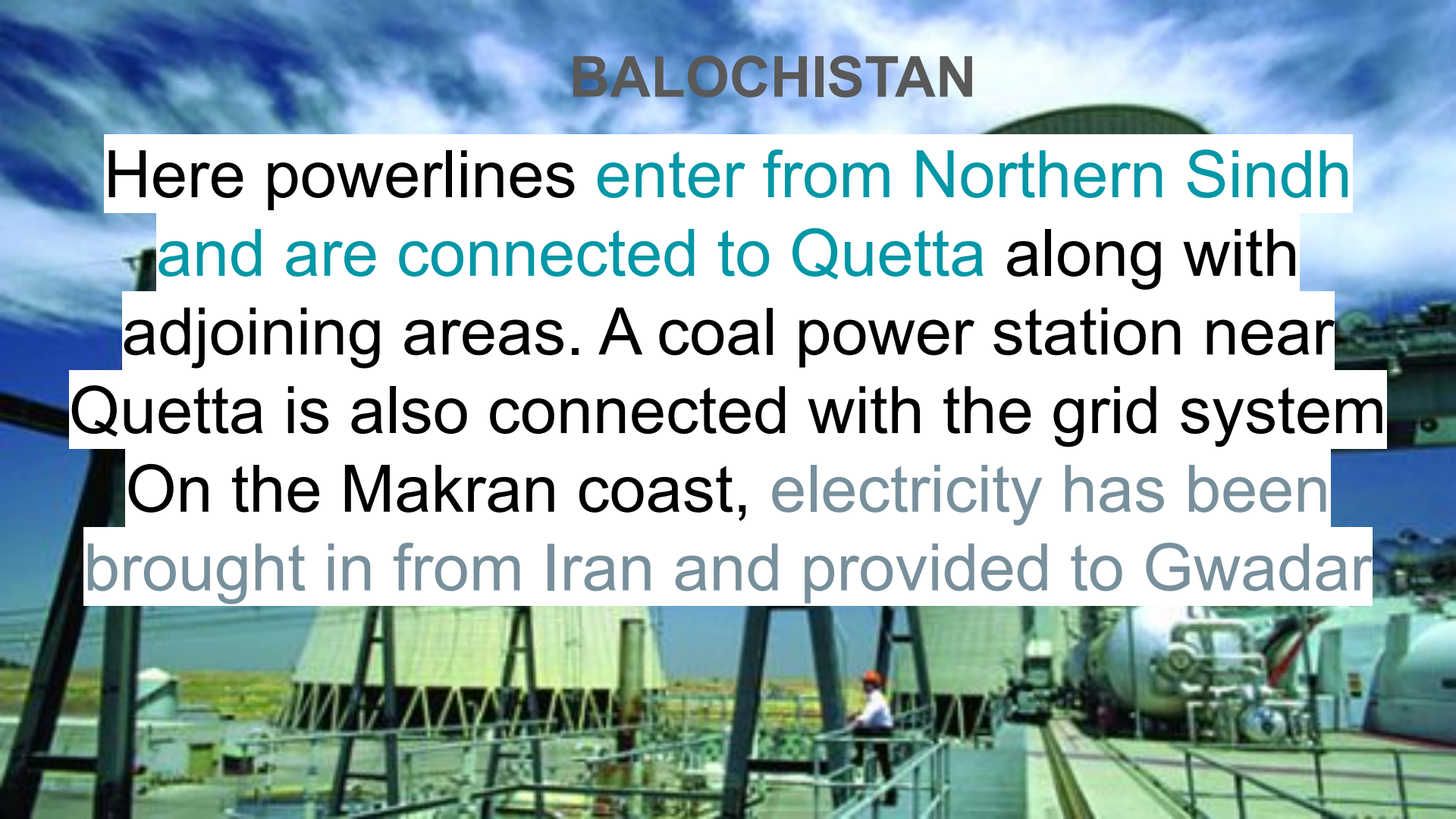
Powerlines enter Southern Punjab from Sindh and run for some distance on both banks of Indus. They connect cities like Multan, Faisalabad, Lahore and Sialkot.

The power lines run in a zigzag manner across the doabs and along Eastern tributaries of the River Indus

These power lines are connected with thermal stations in Punjab along with the power lines from Mangla dam, the nuclear power station at Chashma and other power projects like the Head of Qadirabad barrage (this barrage has turbines installed)

BALOCHISTAN

Here powerlines enter from Northern Sindh and are connected to Quetta along with adjoining areas. A coal power station near Quetta is also connected with the grid system On the Makran coast, electricity has been brought in from Iran and provided to Gwadar




PROBLEMS!

1. Institutional mismanagement
2. Power supply is limited to some areas and is not reliable
3. Most of the equipment is old and isn't replaced or maintained. Thus efficiency is low
4. Loadshedding
5. Machines may become faulty due to sudden outage of electricity or spike in voltage
6. Poorly maintained transformers
7. The products/goods may also be damaged due to loadshedding like for example ice cream
8. Companies may be forced to increase the product costs to not face losses.
9. Businesses may face delay in fulfilling orders.
10. Electricity has increased price

Rates for electricity are increasing thus discouraging foreign investors from investing as they will get lower profits. This leads to ageing machinery and lack of innovative ideas in the industrial sector, which hampers growth. In winters the amount of water in dams decreases, so does the production of electricity. Majority of the power units are thermal and running on oil, much of which is imported at a huge cost. Import is from a volatile region of Middle East, so supplies aren't always guaranteed. Also IPP's (Independent Power Producers) charge a higher rate for a unit of electricity produced than the rate at which electricity is provided to the common man, which leaves a budget

Furthermore, the rampant theft of electricity means that the state owned WAPDA cannot pay all the power generators on time (therefore they don't generate electricity as they don't have money to buy furnace oil etc). WAPDA itself suffers a loss as the costs are made up from the state treasury. Thus the state gives less and less subsidies to the industrial sector

Also, it is expensive to lay down overhead cables from where electricity is produced to where demand is (like from Tarbela dam to Islamabad). The terrain is rough and capital costs are high, Losses are high too due to the

GOVERNMENT PLANS AND FUTURE PROJECT IMPLEMENTATION PROSPECTS

1. the Thatta-Badin wind corridor has the potential to generate around 50,000 MW.
2. A modern wind turbine can generate around 1.2MW in ideal conditions with the most advanced ones capable of more than 7 MW. It takes a million dollars to buy a 1.2MW Wind turbine.

3. On the other hand, in the Northern areas there is the potential to generate around 46,000 MW of electricity through both small scale hydroelectric projects and big dams.
4. SHP (small scale hydroelectric projects) are preferred because they don't have any reservoir and thus people aren't displaced.
5. Also, water supply downstream isn't affected and also little if any forest area is flooded.
6. They are water-runoff projects with a simple pipe through which water passes and turns the turbine. But the government still needs to invest or provide technical training to local turbine manufacturers as the quality of the components is below par. Small interest free loans may also help to speed up this process A Rs.80,000 SHP project can provide 300W electrcity

7. On the other hand solar power in Pakistan is a bit expensive. If government grants subsidies and banks are willing to give loans, then their use can significantly increase.
8. On average a 2.5 kilowatts (average middle class house power consumption) can cost around $10,500. This is around 860,000 rupees.
9. Large areas of Pakistan have more than 300 sunny days a year. These areas are also unpopulated like Kharan Desert.

10. Biogas projects can also be implemented. On average a plant costs around 40,000 Rs.

11. This provides methane gas to be used for cooking. If the size is up scaled, then enough gas can be produced to run a generator to produce electricity for a small village.
12. Lastly Pakistan has potential to generate 50,000 MW of electricity from Thar Coal for 800 years! The current demand is 18,000MW