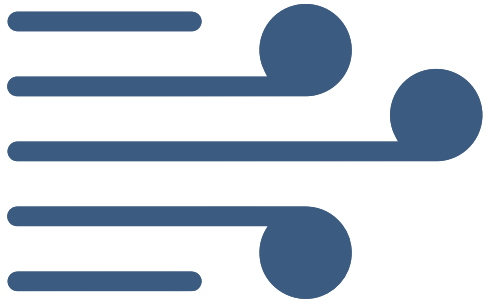
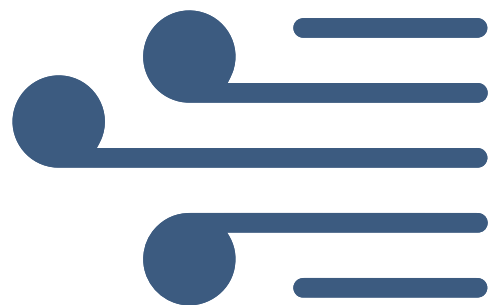




**DYNAMIC ENERGY FLOW**  
SOLUTIONS PVT. LTD.



Leading the  
Charge Towards  
**Sustainable**  
Energy Solutions



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## ► Introduction of Biogas:

At Energy Flow, we lead the transformation of organic waste into biogas, positioning ourselves at the forefront of sustainable energy solutions. Our advanced biogas plants efficiently process diverse types of organic waste—vegetable or animal, terrestrial or marine, liquid or solid—into renewable energy, highlighting one of the most ecological energy generation processes available today.

Biogas is produced through the anaerobic decomposition of biomass, which includes waste from agriculture, cattle dung, sugarcane press mud, municipal solid waste, and sewage treatment plants. This energy-rich gas primarily consists of methane (~60%) and carbon dioxide (~40%), with trace amounts of hydrogen sulfide. Biogas can be used directly as a fuel or further purified to produce Compressed Bio-Gas (CBG). With methane content exceeding 90%, CBG closely resembles commercially available natural gas in both composition and energy potential.

Energy Flow is committed to leveraging this sustainable energy source to drive environmental stewardship and innovation, paving the way for a greener future.



## ► Purification of Raw Biogas:

Our core focus lies in the purification of raw biogas, a meticulously designed process aimed at unlocking its full potential as a clean and efficient energy source. Through advanced purification techniques, we elevate methane concentration while eliminating impurities, ensuring optimal energy output and environmental sustainability. Our purification processes adhere to the highest industry standards, guaranteeing purity and efficiency at every stage.

## ► Principal of PSA/VP SA Biogas Purification:

Central to our purification process is the innovative utilization of Pressure Swing Adsorption (PSA) and Vacuum Pressure Swing Adsorption (VPSA) technologies. These systems employ specially designed adsorbents to selectively capture CO<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>S, and H<sub>2</sub>O molecules under precise conditions, yielding purified methane-enriched gas. By leveraging the principles of adsorption and regeneration, we achieve unparalleled efficiency and reliability in biogas purification, setting new benchmarks in sustainable energy solutions.

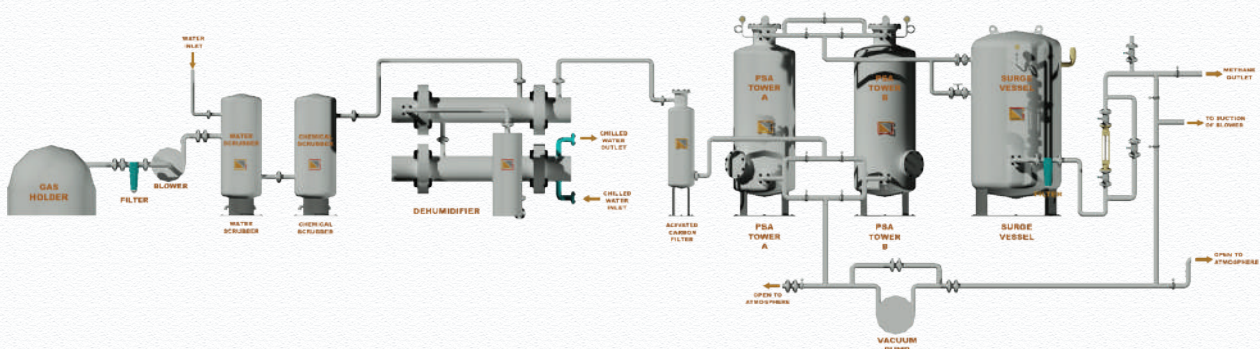
## ► Features of VPSA Biogas Purification System :

Our VPSA Biogas Purification System embodies a fusion of cutting-edge features and advanced functionality. From high efficiency and lower maintenance requirements to reduced energy consumption and eco-friendly fuel generation, every aspect of our system is meticulously engineered for superior performance. With user-friendly operation and a sturdy design ensuring trouble-free operation, our system represents the pinnacle of biogas purification technology.

## ► Advantages of VPSA Biogas Purification System:

- High-quality gas output
- Reduced methane losses
- Operator-friendly design
- Consistent gas purity
- Robust construction for uninterrupted energy production
- Compact footprint for space efficiency
- Environmentally friendly fuel generation
- Lower maintenance requirements
- Energy-efficient operation
- Streamlined performance for a wide range of applications

## ► Schematic Diagram of the system:



## ► PSA Nitrogen Generator & Its Features:

Our PSA Nitrogen Gas Generator is engineered to deliver reliable nitrogen production for diverse industrial applications. With modular design and automated operation, our generator offers unparalleled efficiency and convenience, ensuring a steady supply of high-purity nitrogen with minimal intervention. Whether for inerting, blanketing, or purging operations, our generator stands as a testament to our commitment to quality and reliability.



## ► Its Features:

- Nitrogen purity from 99% to 99.999%
- Dew Point up to -40°C
- Nitrogen flow capacities from 5 Nm<sup>3</sup>/hr to 2000 Nm<sup>3</sup>/hr
- Delivery pressure up to 7.5 bar to 12 bar (g)
- Ready to use upon delivery
- Modular skid-based unit with fully automated operation featuring one-touch start and stop
- Easy to maintain with continuously monitored purity and flow



## ► PSA Oxygen Generator & Its Features:

Experience the reliability and efficiency of our PSA Oxygen Gas Generator, equipped with standard features for seamless oxygen production. Designed to meet the stringent requirements of various industries, our generator delivers consistent performance and high-purity oxygen, empowering businesses to optimize their processes and enhance productivity.



## ► Its Features:

- Oxygen purity from 90% to 94%
- Oxygen flow capacities from 5 Nm<sup>3</sup>/hr to 100 Nm<sup>3</sup>/hr
- Delivery pressure up to 4.5 bar
- Ready to use upon delivery
- Modular skid-based unit with fully automated operation
- High reliability
- Easy to maintain with continuously monitored purity and flow
- High Reliability

## ► Heatless/Desiccant Air Dryers (IP series) & Its Features:

Our Heatless/Desiccant Air Dryers represents the pinnacle of moisture removal technology, boasting uninterrupted performance, low power consumption, and modular design.

Whether for critical industrial processes or compressed air systems, our dryers ensure reliable operation and superior moisture control, enabling businesses to maintain peak performance and efficiency.



## ► Its Features:

- Uninterrupted performance
- Low power consumption
- Modular design
- Desiccant lifespan exceeding 5 years
- Capacity range from 50 to 2500 CFM
- Operating pressure from 5 to 50 bar
- Dew point between -40°C to -60°C
- Operating temperature up to 40°C

## ➤ Screw Conveyor & Its Application:

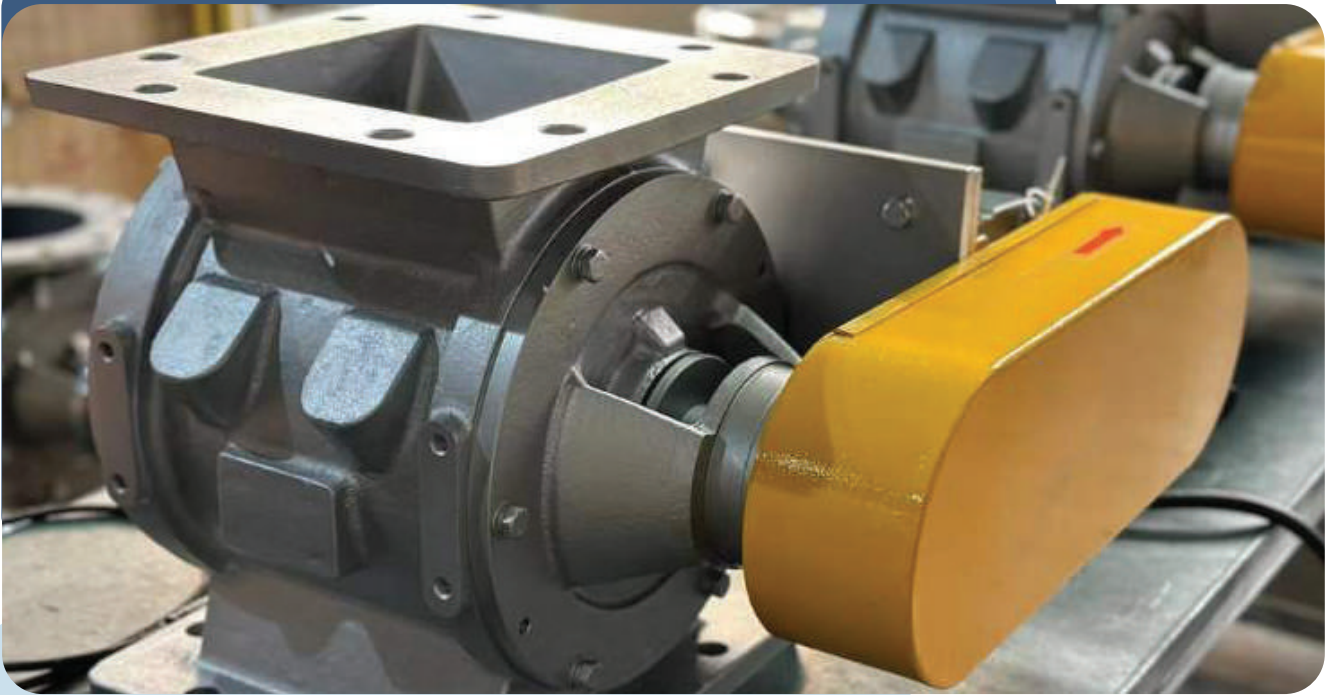
Unleash the versatility of our Screw Conveyor, a volumetric conveying device engineered to handle a wide variety of dry, free-flowing products with precision and efficiency. With customizable flight configurations and specialized coatings, our conveyor offers cost-effective material handling solutions tailored to the unique requirements of each application, ensuring seamless integration and optimal performance.





## ➤ Rotary Airlock Valve (RAV) & Its Application:

Discover the versatility and reliability of our Rotary Airlock Valve (RAV), meticulously engineered for regulatory feeding, dust collection, and pneumatic conveying systems. With precision machining and high tolerance, our valve ensures precise metering and sealing, facilitating smooth material flow and preventing air leakage, even in the most demanding industrial environments.



## ► Air Receiver Tank:

We specialize in manufacturing low, medium, and high-pressure vessels for a wide range of applications. Our tanks are constructed from materials specified by our customers, with mild steel and stainless steel being the most commonly used. Adhering to a stringent quality policy, we ensure excellence from the initial design phase through to the final painting of each vessel.

Experienced in fabricating pressure vessels and air receivers, we design, manufacture, and supply customized solutions tailored to meet our clients' specific requirements. Our expertise guarantees the delivery of high-quality pressure vessels, air receivers, and gas storage tanks.

Experienced in fabricating pressure vessels and air receivers, we design, manufacture, and supply customized solutions tailored to meet our clients' specific requirements. Our expertise guarantees the delivery of high-quality pressure vessels, air receivers, and gas storage tanks.



## ► Refrigerated Air Dryer & Its Features:

The refrigerated air dryer operates in two stages: the first stage is a heat exchanger, and the second stage is refrigeration. Initially, the incoming warm and humid air passes through the air-to-air heat exchanger. It then enters the refrigeration unit, which reduces the temperature of the compressed air, achieving a pressure dew point (PDP) of 3°C and an atmospheric dew point (ADP) of -20°C.

## ► Its Features:

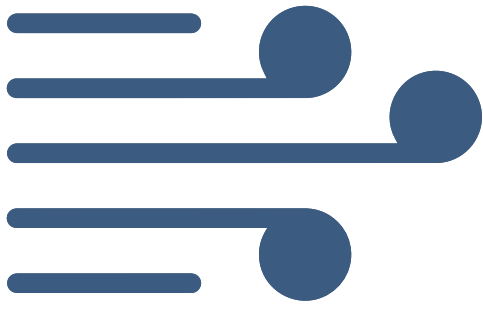
- Zero purge loss
- Low operating cost
- PDP of 3°C and ADP of -20°C
- Capacity ranging from 50 to 1000 CFM



## ► Industries We Serve:

- Pharmaceuticals
- Chemicals
- Agriculture
- Food Processing
- Metalworking
- Cement
- And more

Spearheading sustainable transformations, one sector at a time.



## **Director:**

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Sai kutir, Near By Old Vegetable market,  
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