# EXCAVATIONS, PIPELINES, AND SEWER COLLECTORS

## HOW IT WORKS: Road Construction



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Many people think of "pipelines" solely in terms of household water systems. We're also familiar with the pipes that supply gas to our apartments. However, few realize that there are hundreds, even thousands, of kilometers of large pipelines transporting enormous volumes of oil, oil products, and gas. These pipelines are often concealed underground or underwater

Oil, gas, and their derivatives travel across continents on large tankers and are transported on land via pipelines. These pipelines can be massive, with diameters up to 2,000 mm and lengths exceeding 1,000 km

## **DIPERINGS:** more than just water and gas



# VITAL ARTERIES OF THE OIL AND GAS INDUSTRY

Pipelines are key to the oil and gas industry, serving as "arteries" that keep operations running around the clock,

days a year

to meet our energy needs. Like a circulatory system, they function continuously, ensuring economic stability in many countries

> A constant need for new main lines keeps production steady. Our high-quality products and services have earned global trust, evidenced by increasing supply volumes

Using these systems, oil and gas are transported over vast distances and converted into various forms of energy, such as automotive fuel or electricity for our homes. Pipeline construction requires pipes of different diameters, high-quality connectors, and valves. In recent years, welded pipes have gained popularity, thanks to modern welding methods that produce joints with only 10–15% less tensile strength than the pipe walls themselves



# **ENERGY SOURCES AND PIPELINE SAFETY**

Oil and gas are primary energy sources, meeting a large portion of the world's fuel and power needs. Statistics show that oil provides 34% of global energy production, coal 24%, and gas 21%. Nuclear energy accounts for 7%, hydropower 2%, and alternative sources like solar and wind just 1% The principal advantage of pipelines is their high safety level. Pipelines are 40 times safer than rail tank cars and 100 times more reliable than tanker trucks for transporting energy resources

According to the American Petroleum Institute, spills from pipelines amount to about 1 gallon per million barrel-miles. By comparison, one barrel transported over one mile (1,609 meters) equals one barrel-mile, and one barrel holds 42 gallons (159 liters)



Today's pipeline-laying methods deliver reliability, safety, and efficiency in transporting oil, gas, water, and other substances across long distances. These technologies aim to reduce costs, minimize environmental impact, and improve the operational characteristics of pipeline systems

# Nodern Pipeline Construction Technologies

# Horizontal Directional Driling (HDD)

Among the most advanced techniques, HDD allows underground pipeline installation without disturbing the surface landscape. It's especially valuable for crossing rivers, roads, or residential areas, ensuring precise placement and less environmental impact







## **ENERGY SOURCES AND PIPELINE SAFETY**

Pipelines face moisture, chemicals, and temperature fluctuations that can lead to corrosion. Modern anticorrosion solutions, such as polyethylene or epoxy coatings, extend pipe longevity and prevent leaks

## MONITORING AND DIAGNOSTIC TECHNOLOGIES

Intelligent monitoring systems ensure safety and timely detection of issues. Specialized sensors record changes in pressure and temperature, as well as potential leaks. Additionally, "smart pigs" (inspection devices) travel through pipelines to identify damage or cracks



# MODULAR PIPE CONSTRUCTION

Modern manufacturing allows for highly precise, pre-assembled pipes equipped with connectors and extra protective layers. This streamlines installation and speeds up construction

## ENVIRONMENTALLY FRIENDLY CONSTRUCTION METHODS

To minimize environmental impact, special measures like soil reclamation, emissions and noise control, and pollution prevention systems are implemented



# INNOVATIVE MATERIALS



During the design phase, 3D modeling systems account for all potential risks and optimize pipeline routes. Digital twins of pipelines are also used for real-time monitoring throughout their operational lifespan

# **3D MODELING AND DIGITAL TECHNOLOGIES**

Beyond traditional steels, composite materials and polymers—lighter, stronger, and more corrosion-resistant —are increasingly used. This is especially critical for challenging geological conditions or underwater installation





## MODERN TECHNOLOGIES AND THEIR IMPACT ON PROFITABILITY IN **PIPELINE CONSTRUCTION**

The adoption of cutting-edge technologies in pipeline construction and operation significantly increases business margins by reducing costs and boosting efficiency and infrastructure durability

### **ONE KEY FACTOR IS LOWER CONSTRUCTION EXPENSES**

- Horizontal Directional Drilling (HDD) cuts landscape restoration costs and circumvents difficult areas like rivers or roads
- Using modular pipe systems, pre-fitted with protective coatings and connectors, accelerates installation while lowering transportation and construction expenses



## LONG-TERM RELIABILITY AND COST SAVINGS

Advanced anti-corrosion coatings and innovative materials such as polymers and composites—extend pipeline service life, reducing maintenance frequency and infrastructure expenditures

Simultaneously, intelligent monitoring systems with pressure and temperature sensors prevent accidents and leaks, avoiding significant financial losses

Inspection devices, or "smart pigs," detect flaws early, preventing unscheduled repairs and ensuring uninterrupted system performance



## AUTOMATION AND DIGITAL TECHNOLOGIES FOR COST REDUCTION

Automating processes—such as robotic welding —reduces human error, labor costs, and extra expenses associated with correcting defects. Digital technologies like **3D modeling** and digital twins help optimize pipeline route design, cutting down on both materials and additional work

Environmentally focused practices, including soil reclamation and pollution controls, help companies avoid fines for ecological violations, bolster their reputation, and open doors to new projects and investors. Moreover, modern materials and techniques improve pipeline throughput, allowing for greater resource transport with fewer losses





The cost of laying 1 km of pipeline depends on various factors, including the pipeline type (water supply, sewer, gas, or oil), materials used, pipe diameter, terrain features, and regulatory requirements. Engineering surveys, documentation, and permits, which take place during the design phase, account for roughly 5–15% of the total cost. Materials (steel, polyethylene, or PVC pipes) comprise 30–60% of the budget, with costs influenced by pipe diameter and the need for protective coatings

**Earthwork**—trench digging, soil removal, and base preparation—represents a major expense, influenced by soil type and terrain. Road, river, or other crossings often require costly methods like Horizontal Directional Drilling (HDD). Installation activities—including pipe laying, welding, and fitting—also make up a large portion of the overall cost



against corrosion and other damage, which adds to





# STRATEGY FOR EFFICIENT, SAFE PIPELINE INSTALLATION

Del Mar Energy Inc carefully plans pipeline construction with a focus on efficiency, safety, and compliance with environmental standards. The planning process has several key stages aimed at minimizing expenses, reducing risks, and ensuring reliable operation



## **ROUTE ANALYSIS AND PLANNING**

First, company specialists conduct a thorough analysis of the area, examining topography, geological features, environmental factors, and population density. The goal is to select a route that minimally impacts natural resources and existing infrastructure. For challenging segments—rivers, roads, and densely populated zones—alternative methods like Horizontal Directional Drilling (HDD) are used



## CHOICE OF MATERIALS AND TECHNOLOGIES

Depending on the type of pipeline (gas, oil, water) and operating conditions, the company selects the most appropriate materials. These might include steel pipes with anti-corrosion coatings, polyethylene pipes for water supply, or specialized insulation for temperature fluctuations. Particular attention is paid to joint quality to prevent leaks and ensure the system's long-term reliability

# **RISK ASSESSMENT AND COORDINATION**

Del Mar Energy Inc places special emphasis on evaluating potential risks related to soil conditions, weather factors, and geopolitical nuances of the region. The company works closely with government agencies and regulatory bodies to secure all necessary permits, while also consulting local communities to minimize social and environmental conflicts





## **COST OPTIMIZATION**

Del Mar Energy Inc adopts modern technologies to optimize the construction process. This includes automated design systems, contact-free monitoring equipment, and innovative pipeline-laying methods that reduce time and expenses. The company also carefully manages logistics to minimize material transportation costs

## **ENVIRONMENTAL RESPONSIBILITY**

Environmental considerations are a top priority. Prior to construction, environmental surveys are conducted to minimize ecological impact. After project completion, site restoration is carried out, including landscaping and compensatory measures





## **DESIGN AND** PREPARATION

During this phase, project documentation is developed, including determining the pipeline's route and selecting materials and technologies. Engineering surveys such as geodetic and geological studies —are conducted, along with soil analysis and environmental risk assessments. The required permits and approvals are obtained from regulatory bodies and, if needed, local communities





# SITE PREPARATION

### ONCE THE PROJECT IS APPROVED, THE AREA IS CLEARED:

- Removing vegetation and preparing the construction site
- Marking the future pipeline route
- Setting up temporary roads and storage areas for materials and equipment

# EARTHWORKS

## THIS STAGE INCLUDES:

Digging trenches whose depth and width depend on pipe diameter and project specifications

Reinforcing trench walls in unstable soils

Preparing the trench bottom, including leveling and adding a sand cushion





## TRANSPORTING AND LAYING PIPES

Pipes are delivered to the construction site and prepared for assembly. This may involve:

Cleaning and inspecting the pipes

Welding pipeline sections on-site

Using specialized equipment to place pipes in trenches



## WELDING AND ASSEMBLY

Sections of pipe are welded together, and welds are tested for tightness using methods like X-ray or ultrasound. Once welded, fittings, valves, and other system components are installed

## **INSULATION AND PROTECTION**

Pipes are coated with anti-corrosion or thermal insulation materials to guard against external factors. In high-load or special-condition areas, additional protective structures like concrete casings may be used



# **TESTING AND INSPECTION**

## **BEFORE COMMISSIONING, THE PIPELINE UNDERGOES MULTIPLE TESTS:**

Hydraulic testing to ensure leak prevention

Examination of welds and connections

Verification of compliance with safety standards and regulations

### **BACKFILLING AND SITE RESTORATION**

After successful testing, the pipeline is backfilled with soil, first covering it with soft material to protect the pipe. The surface is then restored by:

Reclaiming the land

Repairing roads, replanting vegetation, or rebuilding any disrupted facilities

## COMMISSIONING

The pipeline is integrated into the existing system and begins operation. Additional monitoring is conducted to detect and resolve any early-stage issues





# HIGH-YIELD INVESTMENT OPPORTUNITY



ROI:

325.584%

## By opening a deposit of \$100,000, your balance will reach \$325,584 in 228 days





# **DEL MAR ENERGY INC.**

The company also engages in electricity production and distribution; manufacturing, repairing, and leasing electromechanical equipment; designing and constructing wind, solar, and geothermal power plants; extracting coal and gas; and developing oil and gas infrastructure

Having started out with just a few oil rigs in 2002, we began developing and manufacturing with our own technologies in 2012

is an american holding company primarily focused on the extraction, processing, and sale of oil

today 91%

of our products are exported to more than 40 countries worldwide





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### **MICHAEL LATHAM**

Founder/CEO

Michael Latham is the founder and CEO of Del Mar Energy. He established the holding company in 2002 in Texas, successfully building and growing industrial sectors



### **STEFAN RUSSO**

CIO (Chief Information Officer)

Stefan started his internship at Del Mar Energy in 2016. In less than five years, he advanced from intern to company director

![](_page_23_Picture_8.jpeg)

### **NICK KAUFMAN**

COO (Chief Operating Officer)

Nick has served as COO since 2018. A Texas native and graduate of the University of Massachusetts, Nick initially worked in law. He first encountered Del Mar Energy in 2013 and officially became a partner in 2018. Nick introduced many of the modernized technologies now used in production

![](_page_23_Picture_12.jpeg)

### **THOMAS LIEBERMAN**

CMO (Chief Marketing Officer)

Born in 1984 in Nevada, Thomas studied at a local university before moving to New York in 2006 to work in marketing and public relations. He began collaborating with Del Mar Energy in 2011. Prior to joining the company, Thomas worked on promoting brands such as P&G, Gillette, and General Motors

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