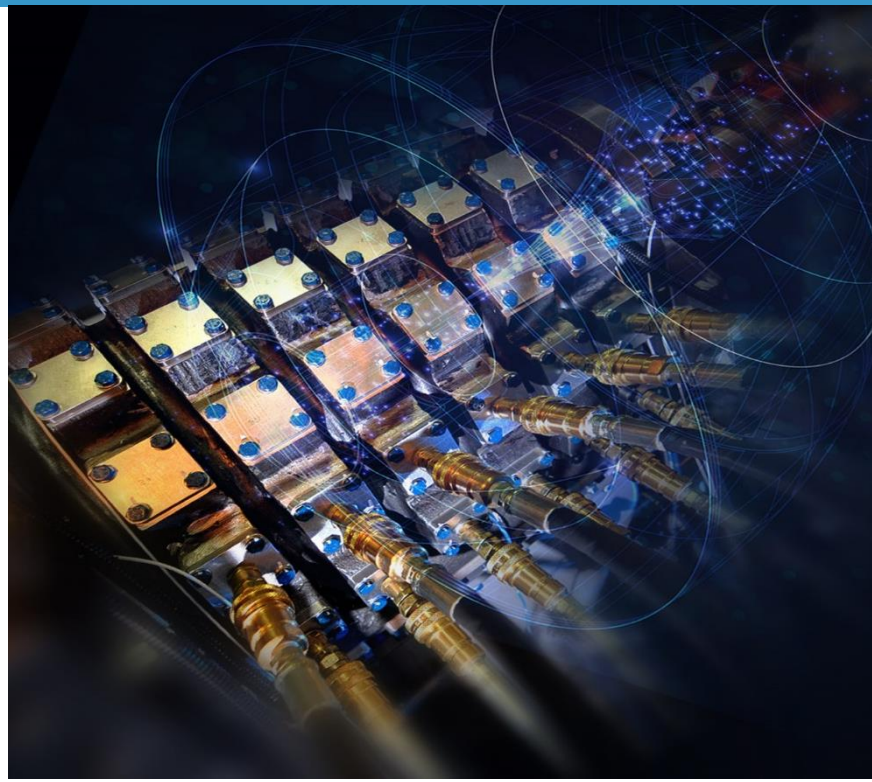
Energy Technology Entrepreneurship

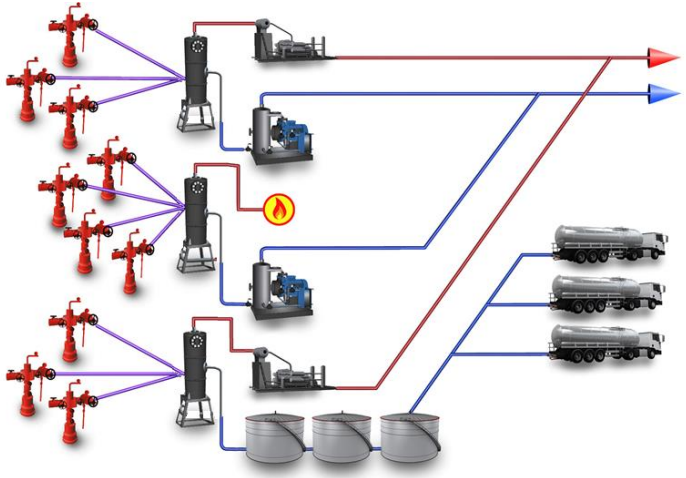
Pedro T. Santos – Founder/Director

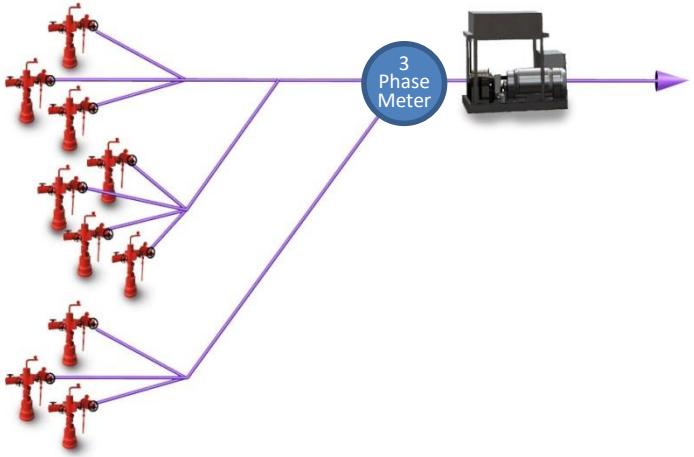
Hicor Technologies, Inc.



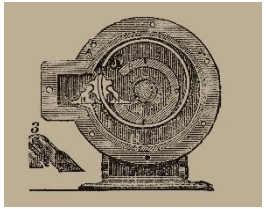
COMPANY INTRODUCTION

Conventional vs Multiphase Production



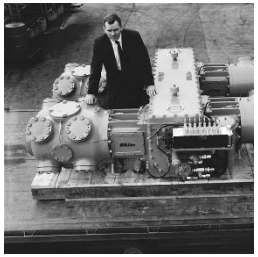


Compressor Types and History



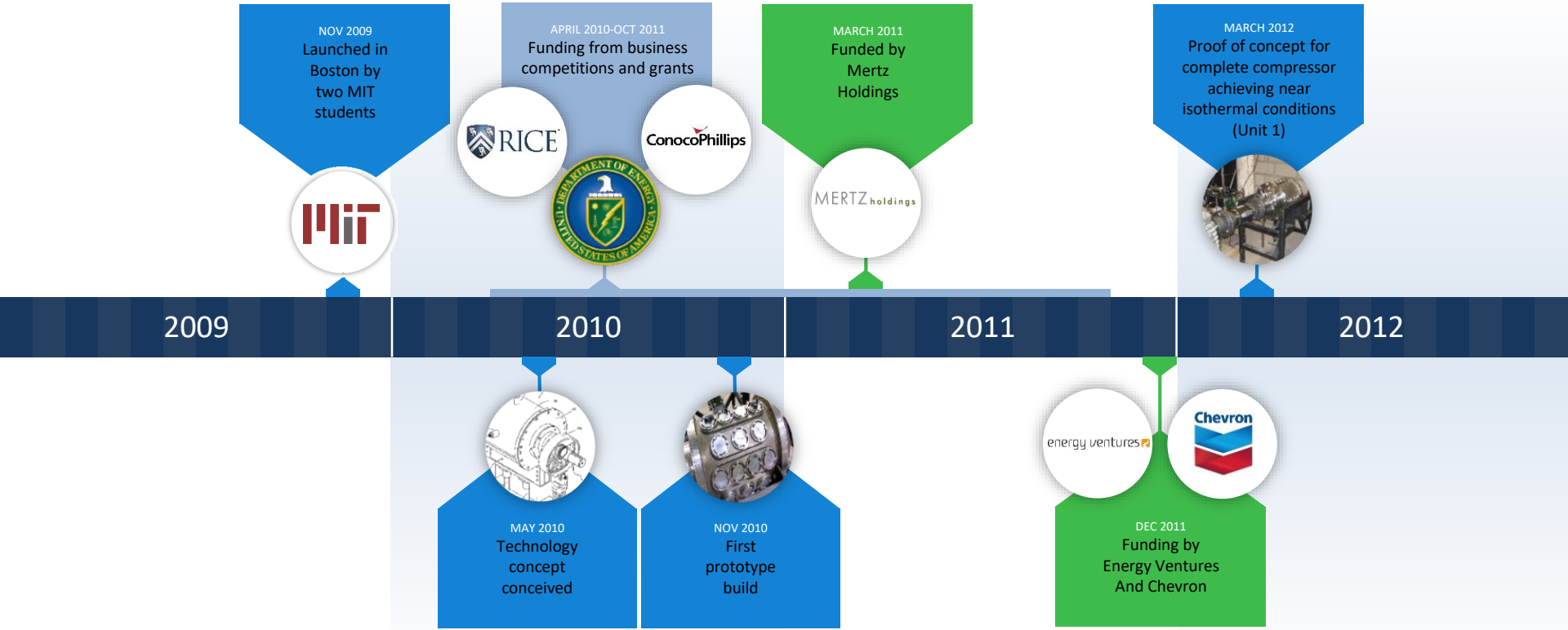
1667 Origin of pump
1689 Origin of centrifugal compressor
1769 Single acting steam engine patent
1791 First gas turbine patent

1814 Invention of valve (for brass instrument)
1860 Invention of piston ring (for steam engine)
1890 Invention of practical ball bearing
1892 First reciprocating compressor
1895 Invention of practical valve for compressor (Hoerbiger)



1899 First practical centrifugal compressor
1935 -1945 Various screw compressor concepts tested
1950's Significant growth of reciprocating compressors
1952 First installed rotary screw compressor
1968 First commercial high-speed air-cooled separable compressor, Ariel (current industry standard)

Company Timeline



Company Timeline

SEPT 2012
Houston office and lab established

JULY 2013-NOV 2014
Third prototype Engineered and tested (Unit 3)

AUG 2014 - CURRENT
Pre-production unit Engineered and tested (Units 4 and 5)

FIELD TRIALS
September 2016

2012 | 2013 | 2014 | 2015

AUG 2012-DEC 2013
Second prototype Engineered and tested (Unit 2)

Q3 2015 – Q3 2016
Field package design and build

Product Evolution

Unit 1
CONCEPT DESIGN

2011-2012
Confirm Technology

Large compression ratios while maintaining low temperatures with liquid injection and atomization

Unit 2
WORKING PROTOTYPE

2013
Confirm Components Design and Manufacturing Processes

All the components are designed for manufacture and assembly and the product performs to basic specifications

Unit 3
WORKING PRODUCT

2014
Product Performance Verification

Steady performance at varying test conditions of pressures and speed combinations maintaining constant operating temperatures and flow rates

Units 4&5
DURABLE PRODUCT

2015
Confirm Field-worthiness and Durability

Performance to specified field maintenance interval cycle

FIELD UNIT

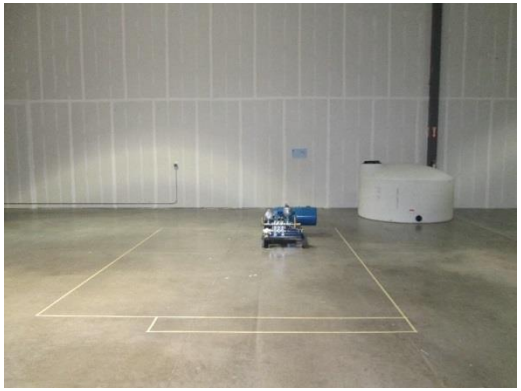
Sept 2016 and on

Current State

Lab Buildout – October 2012 to Present

Then:





Now:



Testing Video

Compressors in the Energy Industry

Upstream

- **Wellhead compression**
- **Onshore gathering, gas injection, CO_2 injection**
- **Offshore platforms and floating structures**

Power Generation

- Fuel gas boosting
- Syngas, vent gas, nitrogen, CO_2 and other air separation applications in integrated combined cycle natural gas facilities

Midstream

- Pipeline compression and transmission
- CO_2 storage and transmission

Petrochemical

- Polyethylene and polypropylene manufacturing
- Booster and boil off gas service

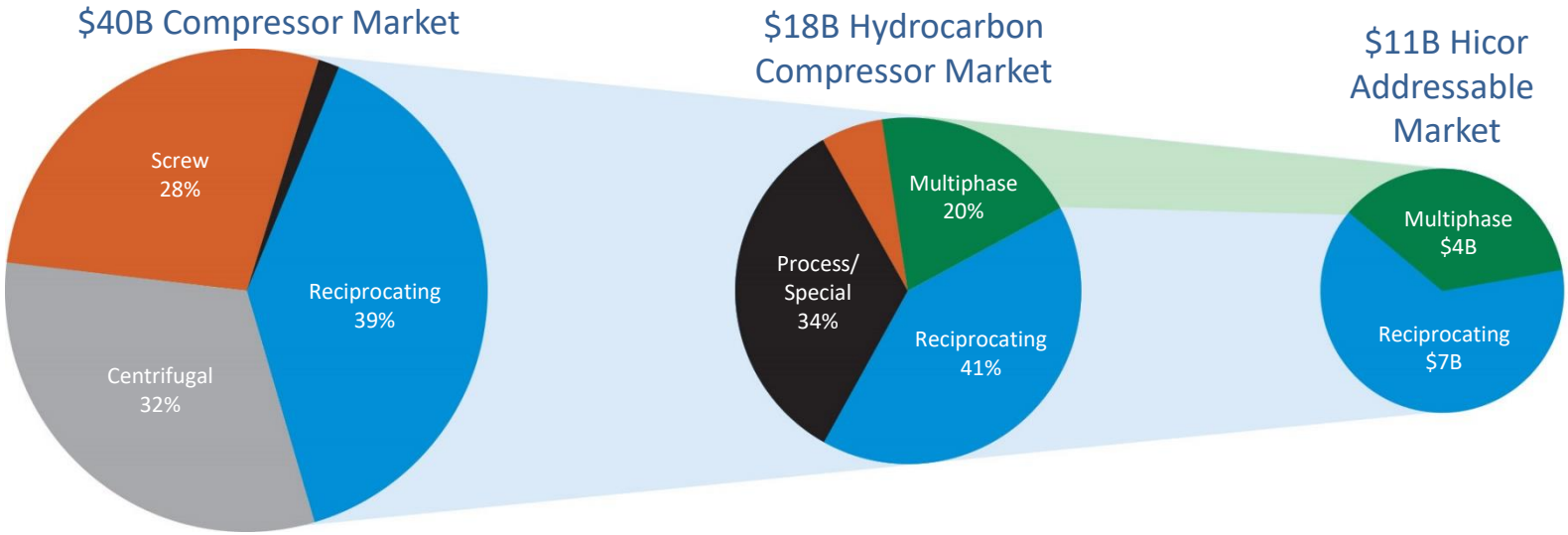
LNG / LPG / GTL

- Gas compression / liquefaction
- Post-regasification compression into pipelines
- Boil off gas service

Refinery

- Hydrogen compression for hydrocracking, hydrotreating, desulfurization and other processes
- Hydrogen plants
- Flame, vent and coker gas service

Large Addressable Market



High Pressure Vapor Recovery & Flare Avoidance

Unconventional Midstream and Gathering

Wellhead Production Enhancement Onshore/Offshore

Offshore and Subsea

- >50,000 vapor recovery units will be needed to comply with EPA regulations
- Hicor enables unique no-recycle loops for high pressure vapor recovery at 2x conventional screw compressor discharge

- Hicor is unique in wet gas and multiphase compression
- Existing recip market of >$7B which Hicor can outcompete on a package-package level

- Hicor 2016 field trials
- Demonstrates ability to increase production from liquid loaded and backpressured wells
- Untapped market of >$4B/yr

- Emerging major markets, with first subsea unit by Statoil in 2015
- Major fields, example with Gullfaks C w/ 22M barrels @ $160M compressor CAPEX

Management Team

Bill Sayre

Chief Executive Officer

25+ yrs in gas compression & processing
Former Exterran VP of Compression
Industry leadership, marketing and sales, gas compression senior executive and field service expertise

Jeremy Pitts

Senior VP of Engineering

Career in mechanical products development including Raytracker (acquired by First Solar)
1st Employee at Hicor
Caltech; MIT mechanical engineering

Jeff Martini

Chief Operating and Financial Officer

15yrs in oilfield finance experience in private equity-backed companies
Former VP of Finance at Stewart & Stevenson
Field operations + support background

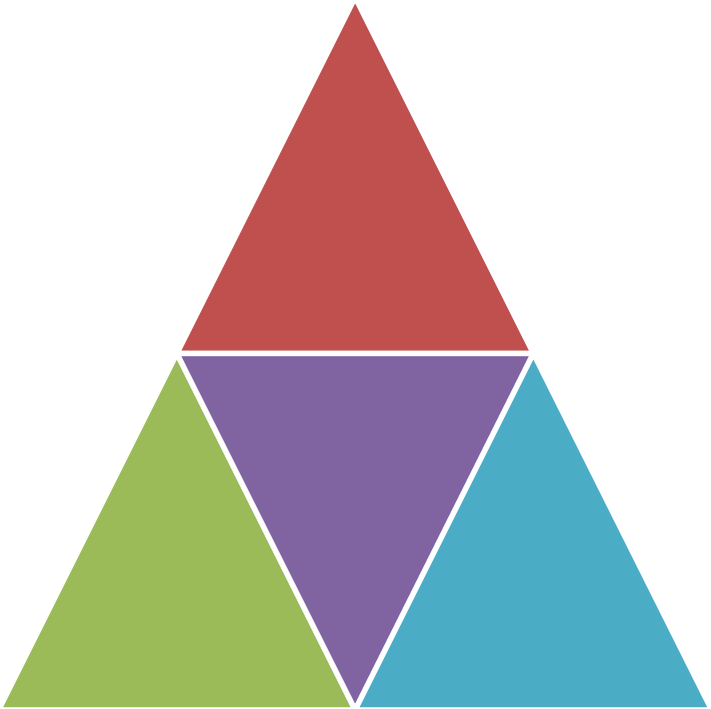
Pedro Santos

Founder / Director

15+ yrs in compression industry
Founded Hicor in 2009 while completing graduate degree at MIT
Entrepreneurial engineering and business development background

ENERGY TECHNOLOGY DEVELOPMENT AND COMMERCIALIZATION PROCESS

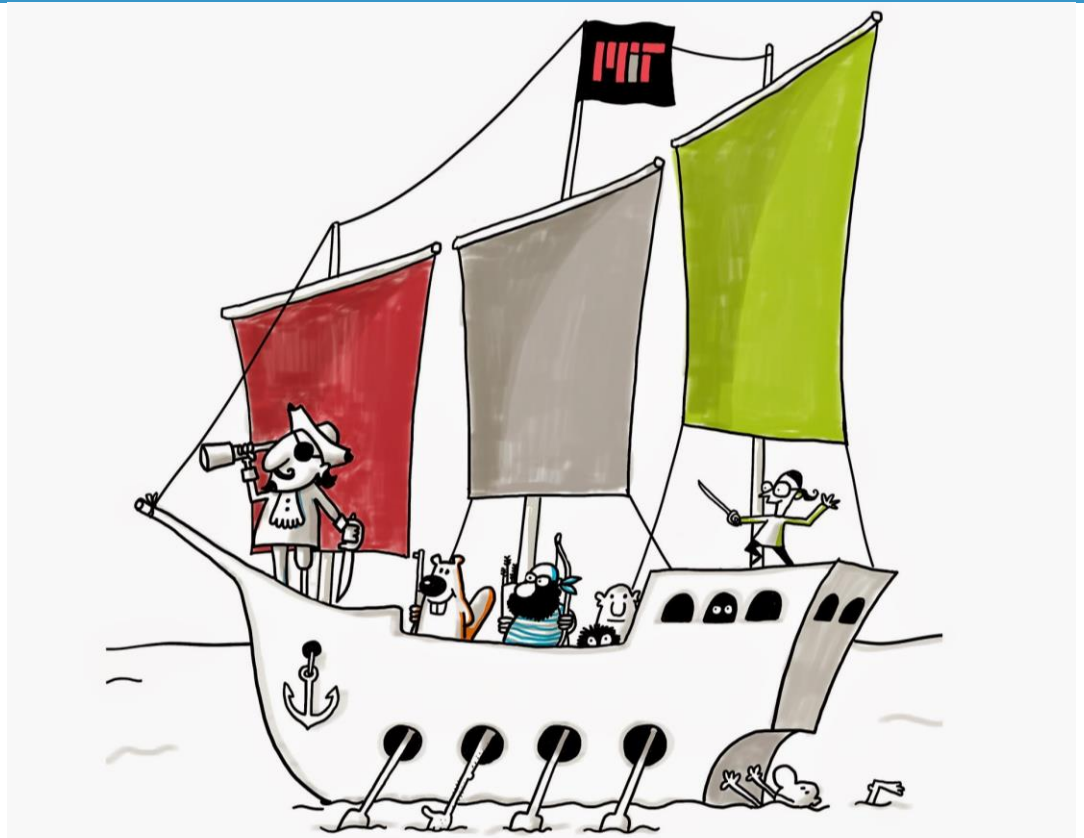
Elements to Develop an Energy Technology Company



- Technical economic advantage
  - 10x benefit to your customer
- Big problem
  - >$10B market
- Applicable skills
  - Sales
  - Technology
  - Field
- Passion
  - You'll need it when doing >100hrs/wk

Fundraising and Building out your Entrepreneurial Path

- Fundraising
  - Start with the problem
  - Sell the future
  - Address difficulties upfront
  - Build a strong team
- Fundraising tips
  - Series A valuation is roughly the same
  - Simple terms beats high valuation
  - Things cost more and take longer
  - Keep burn low for as long as possible and until you get paying customers
  - Have internal and external plans
  - Pitch first to friends, then to investors from whom you don't want money
- Career recommendations
  - Work for an entrepreneur
    - Be ready to roll up your sleeves
  - Fail miserably at sales, but try again and again until you become good at it
  - Always reflect on your losses, will be many
- General observations about technology entrepreneurship
  - Don't romanticize entrepreneurship
    - Uber
    - Apps
    - Energy
  - Be ready to work hard for little money
  - If you're ok being poor and unloved, and will run through a brick wall, then go for it



It's more fun to be a pirate than to join the navy

—Steve Jobs

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