Battery Industry Workforce Needs

Robert Kamischke, CFO

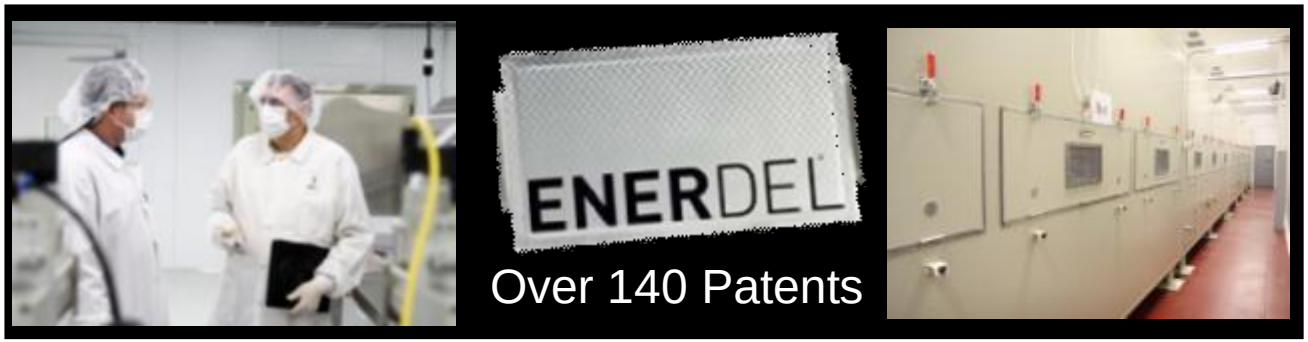
ENERDEL

July 26, 2010

WHO WE ARE

Complete lithium-ion battery solutions provider

- **Utilizing proven, patented technology**



- **Manufacturing and operating globally with expertise**

ENER1 COMPANIES

ENER1

NASDAQ: HEV

Lithium Ion Solutions

ENERDEL

ENERDEL

Advanced Technologies

ENERFUEL

NANOENER

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KEY PARTNERSHIPS

Strategic alliances result in the most advanced solutions as technology and infrastructure evolve

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MARKETS SERVED

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Customers

Cross Section of Announced Customer Programs

Portland General Electric

RECAP: RECENT DEVELOPMENTS

June 10: ENER1 partners with Russia's Federal Grid Company to develop energy storage solutions

May 10: ENER1 agrees to joint venture with Wanxiang, Largest Auto Parts Supplier to Chinese Car Industry

May 10: ENERDEL completes Production Part Approval Process for THINK and ships first production packs

May 10: ENERDEL confirmed as exclusive supplier for Volvo C30 Pure Electric Vehicle (PEV)

May 10: ENERDEL with ITOCHU, Family Mart, Mazda and other leaders unveil auto-to-smart grid project in Japan

January 10: ENERDEL selected to supply batteries for Japanese electric bus demonstration project

January 10: ENERDEL to invest $237 M in third Indiana lithium-ion battery plant

November 09: ENERDEL enters utility energy storage market to supply new DOE-backed smart grid program

November 09: ENERDEL wins U.S. Army contract to develop batteries for new "Hybrid Humvee"

August 09: ENER1 takes 31% stake in EV manufacturer, THINK Global

August 09: ENERDEL selected to receive $118.5 M in federal grant funding under the stimulus package

July 09: ENERDEL and the Nissan Motor Co. to research electrical conductive material

July 09: ENER1 & THINK selected for Japan Postal Service EV Conversion Program

July 09: ENERDEL awarded $3.3 M for safety research on auto lithium-ion battery

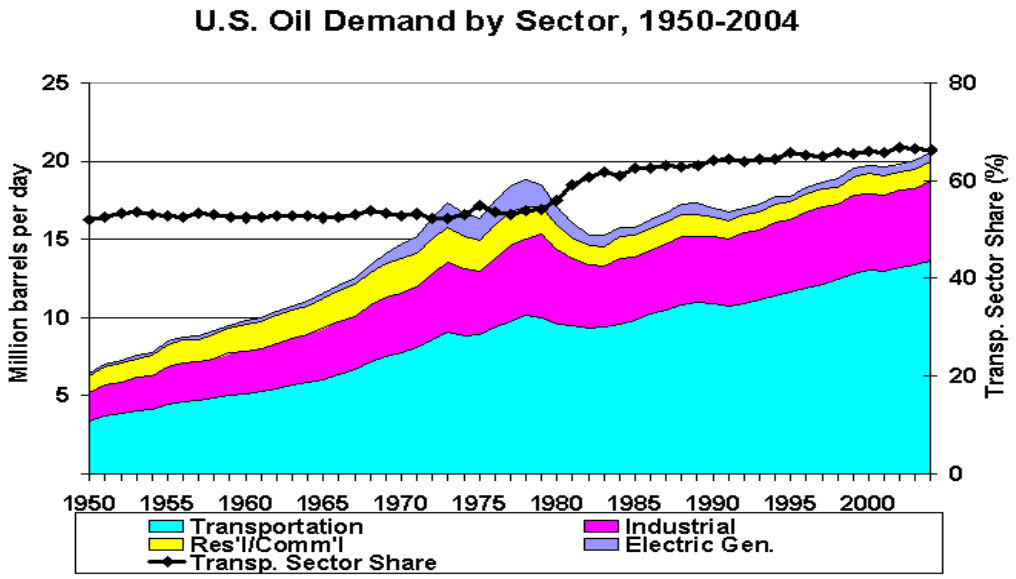
America Benefits

An Overview

U.S. ENERGY EXPENDITURES: TRANSPORTATION EQUATES TO APPROX. 70% OF U.S. TRADE DEFICIT

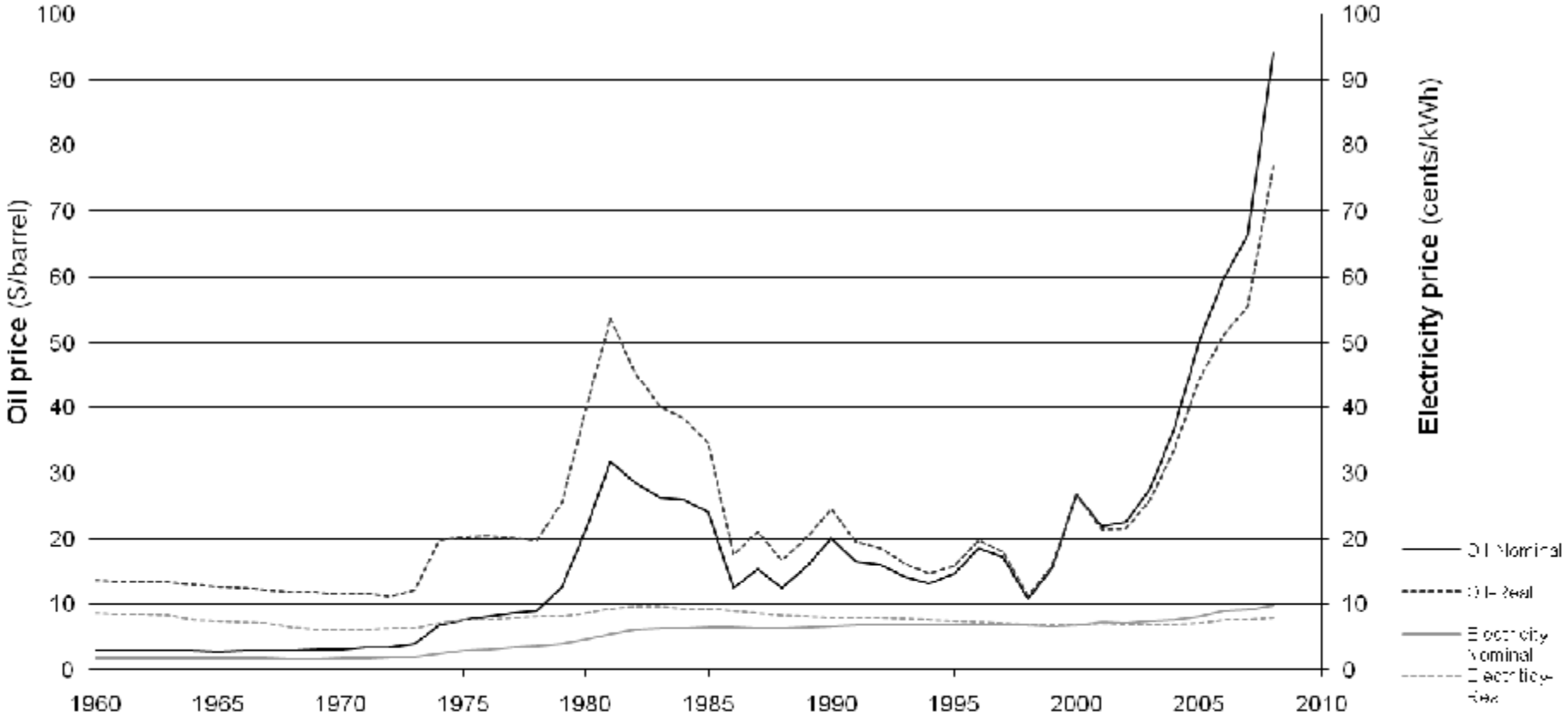
- Of total U.S. oil consumption, 2/3 of use is for the transportation sector
- In 2006, the transportation expenditure was more than 70% of the U.S. trade deficit
- Light-duty automobiles represent 40% of annual U.S. oil consumption, which alone represents 25% of the U.S. trade deficit

	1995	2000	2002	2003	2004	2005	2006
Motor Gasoline (Billions of dollars)	$134	$191	$175	$205	$247	$304	$348
Transportation Sector (Billions of dollars)	$187	$279	$251	$295	$364	$466	$538



Source: Energy Information Administration, U.S. DOE

VOLATILITY OF OIL VS. ELECTRICITY PRICES IN THE U.S.



From 1960-2008, the annual volatility of oil prices is over 7 times greater than that of electricity prices in nominal terms (over 15 times in real, inflation-adjusted terms).

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Source: Energy Information Administration, U.S. DOE

DRIVERS OF MARKET ADOPTION: GOVERNMENT AND INDUSTRY SUPPORT

U.S. Administration Goals:

- Increase energy security by reducing U.S. oil imports by more than 30%, from 11 M barrels per day to 7.5 M by 2020
- Cut greenhouse gases 20% by 2020 and 80% by 2050
- CAFE standard to increase to 35.5 mpg by 2016
- Place 1 M PHEVs/EVs on U.S. roads by 2015

European Government Targets:

- France: pledged to put 2 M PHEVs/EVs on the road by 2020
- Germany: pledged to put 1 M PHEVs/EVs on the road by 2020
- Spain: plans to put 1 M PHEVs/EVs on road by 2014
- EU: reduce greenhouse gases at least 20% by 2020 and cut overall energy consumption by 20%
- EU Legislation: cut fleet CO2 emission average to <130 g/km in 2015, with a target of 95 g/km specified for 2020

Acceleration in Commitment from Global Auto Industry

- Estimated EV market by 2020: 17% of global automotive market

Manufacturing Workforce

What is needed?

MANUFACTURING AND ASSEMBLY

ELECTRODE MANUFACTURING

MIXING

COATING

CALENDERING

SLIT PUNCH

CELL ASSEMBLY

CELL ASSEMBLY DRY ROOM

ELECTRODE STACKING

CELL ASSEMBLY

FORMATION

PACK ASSEMBLY

SUB PACK

ELECTRONICS

PACK TESTING

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EnerDel Workforce Needs

EnerDel requires various levels of education and training within many diverse manufacturing positions.

- High school, manufacturing certifications, 2-year degrees, bachelors, masters, PhDs
  - Engineering – High Skills
  - Chemistry or Advanced Materials – PhDs
  - SGA
  - Operations – Middle Skills
- The majority of new positions will be operations related.

Engineers Needed

Engineers need a 4-year degree and in some cases companies in our field are looking for advanced degrees as well.

- Advanced Materials
- Chemical
- Electrical
  - Circuit and systems electrical design
- Mechanical
  - Mechanical systems design and integration
- Software
  - BMS

Engineering Gap Point

Advanced Materials and Chemical/Battery Engineers

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Operations Workforce Needed

Most operations employees hold a 2-year program degree or specific certifications.

- Electrode Fabrication
- Logistics
- Pack Assembly
- Maintenance
- Testing and Monitoring
- Cell Assembly – H.S. equivalency
- Module Assembly – H.S. equivalency

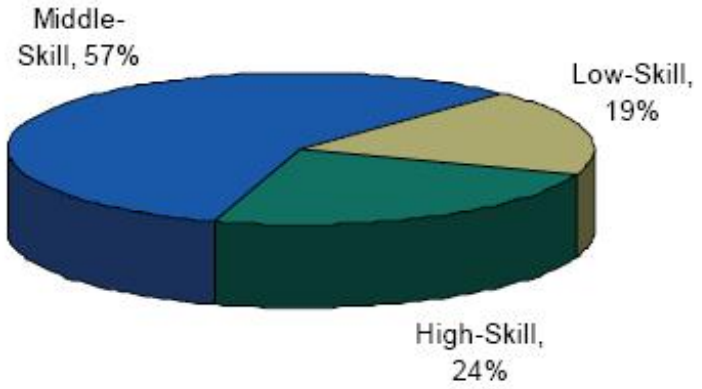
Operations Gap Point

2-year program graduates with understanding of manufacturing environment demands including quality controls

Middle-Skill Jobs

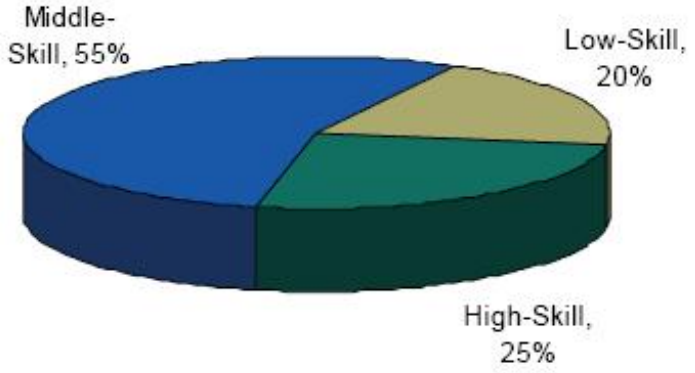
Demand for Middle-Skill Jobs is Strong, Will Remain Strong in Indiana

Indiana Jobs by Skill Level, 2006



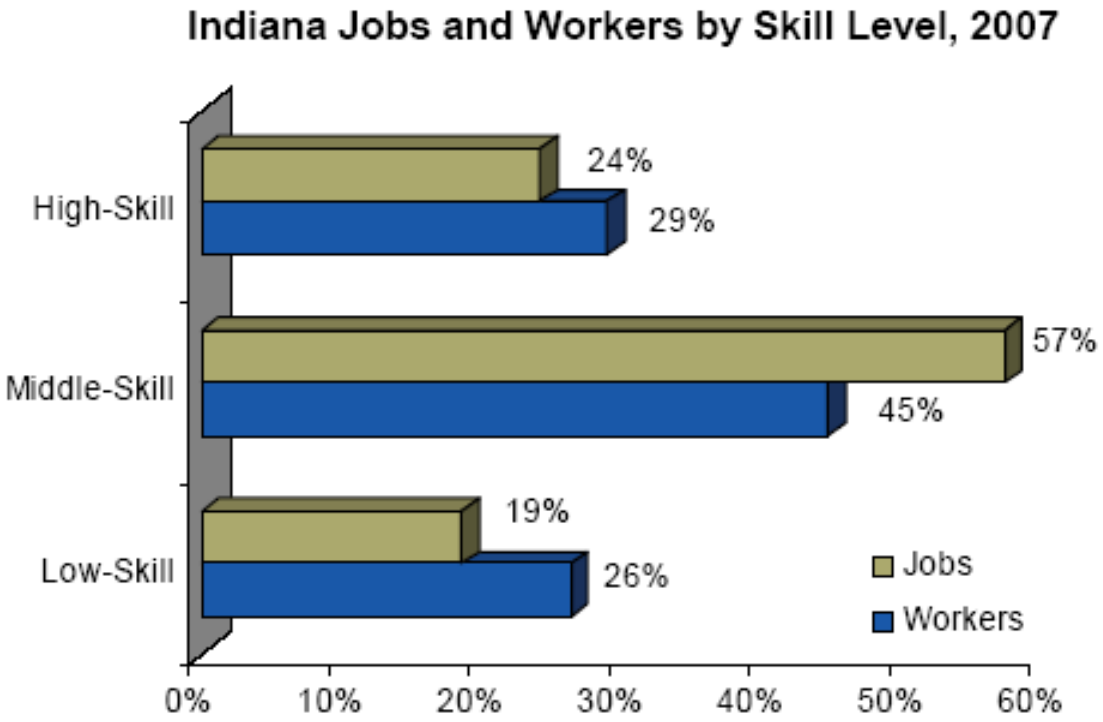
Source: Indiana Department of Workforce Development

Indiana Jobs by Skill Level, 2016



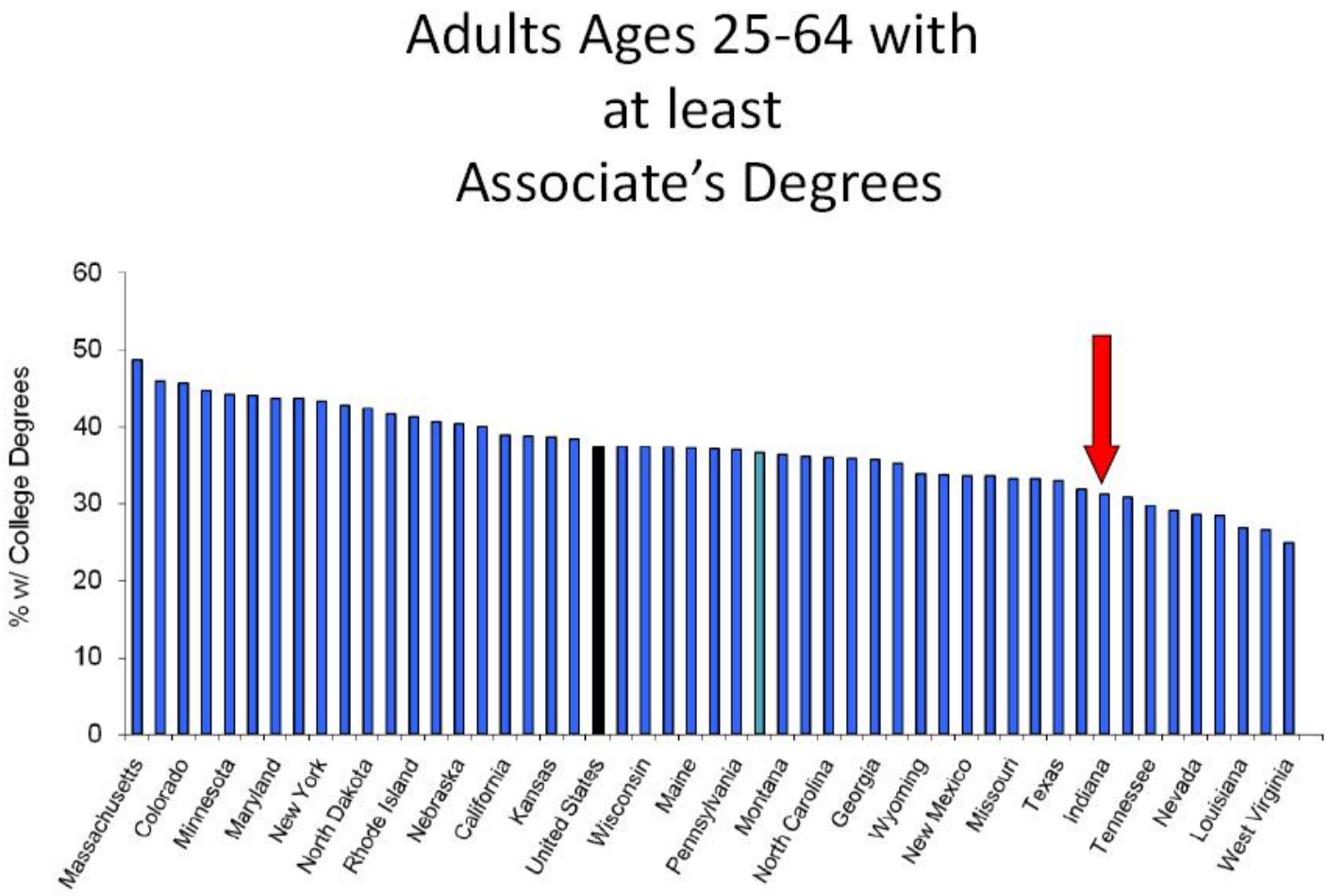
Source: Indiana Department of Workforce Development

Supply and Demand for Middle-Skill Jobs



Sources: Indiana Department of Workforce Development & US Bureau of the Census

Indiana Education Barriers



Indiana Energy Cluster Skills Labor Market Report Monster Study (2008)

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Indiana – Breaking through the Education Barriers

The New Green Tech Jobs

NCWE
National Council *for* Workforce Education

The Intersection of Policy and Practice

Manufacturing – Installation - Service

- Associate of Applied Science *Platform*
  - Industrial Technology
  - Advanced Manufacturing
  - Engineering Technology

IVY TECH COMMUNITY COLLEGE

Indiana – Breaking through the Education Barriers

New Degree Concentration Areas:

- Electric line construction
- Power plant technology
- Natural gas technology
- Utility scale wind turbines
- Residential/Commercial scale wind turbines
- Home technology integration

Updated Curriculum – Transportation Electrification

- Service electric vehicle
- Recycle & reuse
- First responder training

Nationally Recognized Certificate Development

NCWE
National Council *for* Workforce Education

The Intersection of Policy and Practice

IVY TECH COMMUNITY COLLEGE

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Recommendations

Summary and Closing Remarks

Recommendations

- As other nations are exploring green tech solutions and moving towards a greener climate, America must focus on broadening educational opportunities for young adults in the areas of science and manufacturing technology.
- Young adults need continued incentive and opportunities to enter post-secondary education in order for the U.S. to meet manufacturing workforce demands.
- Middle-Skill jobs should be a focus of the federal and state governments because of the rare surplus of these job types in many regions.
- Continued investment in advanced transportation technologies that are creating jobs and strengthening the economy

Watch Us Grow
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