

# Introduction

I am going to explain how bad I am at predictions and then make a whole bunch of them.

Keating Willcox -

I have a chronic bronchitis so please ignore my occasional cough. Thank you.

Masters Degrees in Computer Science,  
Religion (Boston University),  
Mathematics (ABD) (Northeastern University)

My experience is in radio station management, and more recently

adviser to some European parliaments regarding currency issues and public policy.

<http://centerforcurrency.blogspot.com/>

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I publish a blog on conversion of Coal to Liquid, but otherwise I have no experience in the energy industry.

<http://coaltooilcoaltoliquid.blogspot.com/>

I am bad at predictions. After I explain why, I will proceed to make predictions about the future of the renewable NH<sub>3</sub> industry. Let's look at our friends, our competitors, and our antagonists. Then let's look at how we can finance all this, look at a scheme using renewable NH<sub>3</sub> as part of a local currency, and make sure the NH<sub>3</sub> market is fair and reasonable.

Has anyone here used  
VAXen recently?

"VAX" is originally an acronym for virtual address extension, the most successful computer line of the Digital Equipment Corporation. Run by the nicest, smartest guy in the room, Ken Olsen, DEC was planned to overtake IBM. They were extremely profitable.

But their decision to make their floppy 5 1/4" disks incompatible with the industry standard, and their inability to sell computers for less than \$50,000 as against IBM's \$2,000, forced them to be sold to Compaq and eventually out of business.

I lost plenty of money owning Polaroid stock as well.

So, that shows my predictions for companies.

I am bad at predictions of trends.

I never thought disk drives would be cheap enough to put in personal computers.

I never thought the Internet would be a commercial success.

I never anticipated the iPad, or the iPhone.

No one can anticipate some of the accidental discoveries that can make such a difference.

The candy bar that melted and gave us the microwave oven.

The test equipment that didn't work, but resulted in the pacemaker.

## **Here we go, let's make some predictions.**

We have an insatiable demand for cheap, clean energy.

The United States electric industry must reliably deliver the electric energy equivalent of 70 quads to run the US economy for one year, or 56 Terawatt hours of electricity per day. This reflects solar cells of roughly 200,000 square miles.

Existing methods of generating energy have problems of

cost

scarcity

safety

clean up closed facilities

transportation

pollution

Renewable NH<sub>3</sub> may be a very profitable business for both the transportation and conversion of fuel to useful power. As you all have been showing, the expense of producing NH<sub>3</sub> without needing carbon fuels as a feed stock has been falling, and our skills at producing large quantities of NH<sub>3</sub> have been improving.

There is opposition to the use of NH<sub>3</sub> for fuel transportation.

Electric utilities are reluctant in some areas to work with local solar power.

Anyone in the carbon fuel economy will understand that we are a valuable asset to the renewable fuel industry, and that industry competes directly with the carbon based fuel industry.

Carbon based fuel plants are still opening faster than they close.

The existing infrastructure for the delivery of liquid and gas fuel are our direct competitors.

We may provide a useful service to the nuclear power industry, but, in general, we compete with them directly.

Not only can our competitors compete on price, they can use powerful legislation to end our business.

When was the first scheduled bus service? It was between London and Paddington.

## Regular service began in April 1833

with Hancock's Steam omnibus The Enterprise. It carried many thousands of passengers, and went 20 mph.

The Locomotive Acts forced the speed limit to as low as 2 mph and required a man carrying a red flag to walk in front of the bus. That was the end of it for a half century. Today, we see legislation limiting fracking as well as oil pipelines.

## Who are our allies?

Almost all energy sources, renewable and non-renewable produce or mine their product in a different time and location than when it is used.

So, virtually all energy usage involves both storage and movement.

Governments are always in need of clean, cheap energy sources for their populations.

Companies and individuals are also looking for clean and cheap energy for their uses.

There is a powerful incentive to replace energy sources with new sources where the pollution is either reduced, distant, or delayed.

Governments are willing to subsidize many startup companies that can do this.

For example, California has increased its solar power by 50% just in 2013.

Companies that use a lot of energy need quick, cheap upgrades to clean technology.

Financial investors looking for energy investments that provide profits from alternative energy companies.

Individuals looking to invest in their property and produce an income stream.

Medical system trying to make society healthier by reducing pollution.

The high tech nature of solar power means a constant reduction in the long term cost of generating electricity from the Sun. They need us.

## **Who is our competition?**

We compete with any other gas or liquid used for energy storage or transit that is safe and cheap.

H<sub>2</sub> synthesis - a good system could put us out of business.

Firewater Fuel provides cheap H<sub>2</sub> from water.

Some solutions have a small carbon footprint or distant carbon footprint.

Siluria transforms natural gas into gasoline for one dollar a gallon

NH<sub>3</sub> production can be large or small capacity.

Large solar facilities can have enormous NH<sub>3</sub> plants, and connecting pipelines.

Local plants run by communities can use moderate NH<sub>3</sub> plants.

Individuals can have family size NH<sub>3</sub> production equipment.

Small groups can invest in a neighborhood size NH<sub>3</sub> production unit.

## **Is this reasonable?**

Imagine a Home Depot combined 2,000 square foot photovoltaic system. This system generates the power needs of the household and its vehicles.

Surplus power can be used by an NH<sub>3</sub> production machine or sent to nearby NH<sub>3</sub> plant. The NH<sub>3</sub> so produced can be transported by pipeline/truck/barge/rail transport - consider all the ways gas for my lawn mower got to travel.

Existing solar systems are often unable to monetize surplus power, so most folks settle for small, rooftop systems.

## **Finance**

With the exception of the smallest units, most will be financed.

Larger NH<sub>3</sub> plants will have investors, or corporate owners.

For a small town's local plant, the town can go to bond and have a municipal facility.

Commercial companies purchase solar panels for housing now, and lease the roof space.

Individuals adding to their farm or housing value by home owned equipment, and provide an income stream.

A state can benefit the NH<sub>3</sub> producers at the expense of other taxpayers by providing price supports for locally produced renewable NH<sub>3</sub>. Supports are an effective way to provide a stable market and a massive increase in production. A state can choose to sell or keep as much NH<sub>3</sub> as it chooses.

## **Currency**

States and cities can offer their own currency, and back it with local production renewable fuel.

Ithaca, New York, and Switzerland have alternative currencies.

An Ames Iowa dollar could be backed by a kg of NH<sub>3</sub> delivered in Iowa.

This has all the good aspects of a gold standard and none of the problems.

Iowa can print more Iowa dollars, knowing that if there are many redemptions, such as a run on the Iowa dollar, they can meet the demand with locally produced NH<sub>3</sub>. As long as Iowa does not get greedy and print too many Iowa dollars, the value of the Iowa dollar will remain stable over time.

## **What are the dangers of NH<sub>3</sub> production financing?**

There are many examples of price manipulation of commodities.

Most commodities are bought and sold many times over before delivery.

Energy is very susceptible to manipulation.

Does anyone remember  
"Death Star", "Get Shorty",  
"Ricochet", and "Load Shift?"

These were the terms used by ENRON trades to create artificial congestion, duplicitous efforts to create artificial shortages, work-arounds of price controls, and then take advantage of the electric utilities compulsory purchasing. None of these strategies were illegal, and are still in use today by other investment companies.

## **My Proposal**

The NH<sub>3</sub> production industry can have the following goals.

1. total safety - NH<sub>3</sub> must solve the problems of frequent accidents, poor maintenance of facilities, weak regulation of safety regulations, and constant improvement in safety.

BP oil spill

Fukushima

Natural gas Pipeline leaks

## 2. Ease of transport.

All cars can be filled at all gas stations.  
All toasters work in every state.

## 3. Make room for future expansion and requirements.

4. Try to get small safe cheap units to market.  
Control excessive price swings.

5. Make an effort to include  $\text{NH}_3$  material in every chemistry classroom in the USA.

My goal is to develop a personal email/letter/phone call friendship relationship with the thousand largest energy customers, with the thousand largest companies in a jam who might need us in a hurry, and with the thousand most likely financial VC funds. This list will include clients in India, Japan, and China. Everyone knows today's news. These guys want relationships so they can get in early on tomorrow's news.

So, if I call, it is because I want to do you a favor and introduce you to someone who wants to work with you and buy your stuff.

Thank you.