Proposed Deliverable

For a start, we are proposing the following training program:

S/No	Programme	No of Days	Tentative Date
1	**Introduction to Artificial Intelligence for the Energy Industry**	**2 Days**	**1st & 2nd May 2020**

Introduction to Artificial Intelligence for the Energy Industry a Non-Technical Training (2 days)

Artificial Intelligence, as part of computer science, is probably the most important technology development of this decade. Artificial Intelligence is about making computers smart. Artificial Intelligence is a field of research to try to simulate all kinds of human capabilities. Simply put, Artificial Intelligence is a tool that is looking for hidden patterns in the massive pool of data that most companies are acquiring or developing in business daily. These patterns have predictive value. Machines that can learn from these massive amounts of data can help you make faster, better and cheaper decisions. Artificial Intelligence should be seen as a tool to craft and implement a strategic vision and that means putting strategy first. Without strategy as a starting point, Artificial Intelligence risks becoming a tool buried inside your company's routine operations: it will provide a useful service, but it will limit its long-term value.

It requires an open mind, and a willingness to change your relationship with technology in order to take advantage of this new technology. Artificial Intelligence brings together Data Engineering and Data Science to quickly gain insights and making predictions that are based on algorithms that can learn from so-called Big Data without relying on rules-based programming. Big Data itself is not exciting. However, with what you can do with it to increase profitability, lower your risks or save costs, is very exciting.

AI; another tool Commodity Traders have to understand

In comparison to other financial trading sectors AI still is in its very early stages of finding successful business adoption among commodity traders.
Currency, equities and interest-rates investors have already used algorithms, machine learning and artificial intelligence to turn data into successful trades for years. Also you could increase the profitability of your trading activities by gathering data on a large scale and run machine-learning algorithms to find patterns - even when the data has inconsistencies – and linking fundamentals with price movements and thus improve decision-making in trading.

Our Philosophy

We do understand that changes in market conditions are essential for developing a successful trading strategy, but that is only the beginning. We believe it is more important to build a simulation environment that ensures decision making models that will be successful in real life. Every trader and analyst struggle how to use the outcome of the mathematical models. In other words how to translate knowledge into real trading decisions. What if everything is done at the same time based on a tool that allow the machine to learn from human traders in an artificial intelligent system? The models used will not change, but you will benefit from the flexibility of the AI technology to cope with the complexity and dynamics of the market environment, in ways that traditional quantitative methods do not.

In the end AI really is a combination of knowing what to look for and how to use the right mathematical tools for it.

About This Course

In this 2 day highly practical and interactive training course, the trainer will take the participants through the latest developments in Artificial Intelligence and share how to apply it to the different business areas within the energy trading business in practice.

The program is structured in such a way that a good balance between theory and practice will be achieved. From experience we know that we will get the best results when the participants are actively involved. All the topics will be explained in-depth with the use of practical examples, real-life case studies and simulations.

Who Should Attend

• C-suite executives
• Trading managers
• Traders
• Risk Managers
• Portfolio Managers
• Compliance officers
• Financial officers
• Sales and marketing professionals
• Technology officers
• Internal audit officers

Anyone who wants to improve the decision automation level in the company using Big data, Artificial Intelligence and Automation.

What You Will Learn

At the end of this training course, you will have a clear idea of how your company could extract value from Artificial Intelligence.

Daily Content

DAY 1

Introduction to Artificial Intelligence and Machine Learning
- What is Artificial Intelligence and Machine Learning
- Basic AI and ML terms and components
- Recent advancements and developments AI
- Enterprise Adoption of Artificial Intelligence
- Relevance AI applications within energy trading companies
    - Machine Learning vs. traditional quantitative methods
    - When does it make Sense
    - State of AI in Enterprise Today
        - Trading
        - Compliance & Surveillance
        - Risk Management
    - ROI for AI investment
- Conceptual Understanding of AI
- Challenges and Limitations
Representative use cases

Practical Guidelines
- **What do we need for talent**
- **What do we need for Data and Data Infrastructure**
- **Understand role of Big Data**
- Data Accessibility
- Usage of AI
- Integration process

How to start within your company
- Role Top Management
- Putting strategy first
- Role Frontline Managers
- In company champions required
- Determine Data Strategy
- 3 Key steps
    - **Focus on value**
    - **Change Management**
    - **Strategy is King**

Essentials Decision Automation with new technologies
- How much control humans and machines should have
- Determining Human-Machine Involvement
- Best practices in Decision Automation

Information Processing
- Data Collection
- Data Collection Technology
- Data Analysis
- Data Analysis Technology
- Decision Making

MBA Style Role Play Exercise

Develop a strategic vision on the Way Forward for introducing Artificial Intelligence within an energy firm

Fueled with information from real life cases the participants will be divided in groups to discuss and design a strategy AI vison for this energy company. During this highly practical session the participants will create a plan for the way forward. After this session you will be much better understand how to take a well informed decision on how and where to apply Artificial Intelligence within your own organization and what the challenges and required efforts from the different departments such as the management and IT are going to be

DAY 2

An artificially intelligent system in energy trading
- Which business cases are compatible with new technologies?
- What is the role of humans and machines in decision making?
- Decision making system main components
- Best practice for development project
    - Picking AI Projects
    - Prioritizing AI Project Ideas
    - Starting an AI Project

Business Process Automation
- Business process analysis
- Business process automation
- Workflow, Permissions and Traceability

Practical steps to go forward
- How Much Control Humans and Machines Should Have?
- Determining Human-Machine Involvement
- Automation Implementation
- Phased-in Approach

Real life Case Study

How Machine Learning increased trading profits by 20%

The trainer will present a case of a real life project (a major European utility) about how to introduce decision automation (with technologies such as Artificial Intelligence, Big Data and Automation) to the trading floor. The result of this project was that the relevant company boosted its trading profitability by 20% , lowered its risk appetite, improved transparency for compliance and internal audit and increased trader performance.

We will show you practical examples of issues such as:

- A company's internal and external data sets
- The tools to use like:
o   Python
o   Data cleaning
o   Regression model creation
o   Forecasting and much more

Q&A and Closure

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About your Expert Trainer: Kasper Walet

Kasper Walet has 25 years of experience and extensive knowledge on a practical and theoretical level about all the aspects related to trading, derivatives and risk management in the commodity industry. Kasper received his Masters degree in Law from the University of Utrecht in 1987. He started his career at the NLKKAS, the Clearing House of the Commodity Futures Exchange in Amsterdam. After working for the NLKKAS for five years, Kasper was appointed as Member of the Management Board of the Agricultural Futures Exchange (ATA) in Amsterdam at the age of 31. While working for the Clearing House and exchange, Kasper became an expert in all the aspects of trading and risk management of commodities. In 1997 he founded his own specialist-consulting firm that provides strategic advice about (energy) commodity trading and risk management. Kasper has advised government agencies such as the European Commission, investment banks, major utilities and commodity trading companies and various exchanges in Europe, CEE countries, North America and Asia. Some of the issues he has advised on are the development and implementation of a Risk Management Framework, investment strategies, trading and hedging strategies, initiation of Power Exchanges (APX) and other trading platforms, the set-up of (OTC) Clearing facilities, and feasibility and market studies like for the LNG and the Carbon Market.

Skilled and accomplished professional with over 25 years of extensive of
C-level board level experience in the energy markets worldwide. Kasper has strong expertise in all the aspects of energy commodity trading markets, international sales, derivatives trading, staff training, risk management and regulatory compliance within dynamic and high- pressure environments. Kasper is a renowned expert in how to apply AI and Machine learning in energy trading organizations.

Kasper has presented workshop sessions about both the physical and financial trading and risk management aspects of commodity and carbon products. These courses were provided to companies across the world, in countries like Japan, Singapore, Thailand, United Kingdom, Germany, Poland, Slovenia, Czech Republic, Malaysia, China, India, Belgium and the Netherlands. In the area of LNG in particular, Kasper provided consultancy and training services to LNG and gas companies like Malaysia LNG, and other energy companies and investment banks. He also completed an extensive feasibility study for a European exchange for the possibility to list LNG derivative contracts. Kasper has published several articles in specialist magazines such as Commodities Now and Energy Risk and he is the co-author of a book called A Guide to Emissions Trading: Risk Management and Business Implications, published by Risk Books in 2004. Kasper will become a lecturer at the Hult International Business School in 2011.

Venue:

The Crowne Plaza Hotel, (Opposite the Reliant Stadium, Houston Texas)

Date:

May 01- 02, 2020

Time: 8:00 am each day

Course Fee:

$2,800 per participants for PETAN member companies

$3,000 per participants for Non PETAN member companies

(Fee includes: Course Material, Tea Breaks,
Lunch and Certificate)

Registration ends by March 31, 2020.

For information on registration and participation contact:

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