

ESG data extraction from News

*TextDistil - Auto-generate **Computable**
Knowledge*

Plan

PART 1

- Importance of ESG
- Controlled ESG data vs Alternate data
- Importance of Text & Knowledge
- Knowledge Graph, key benefits

PART 2

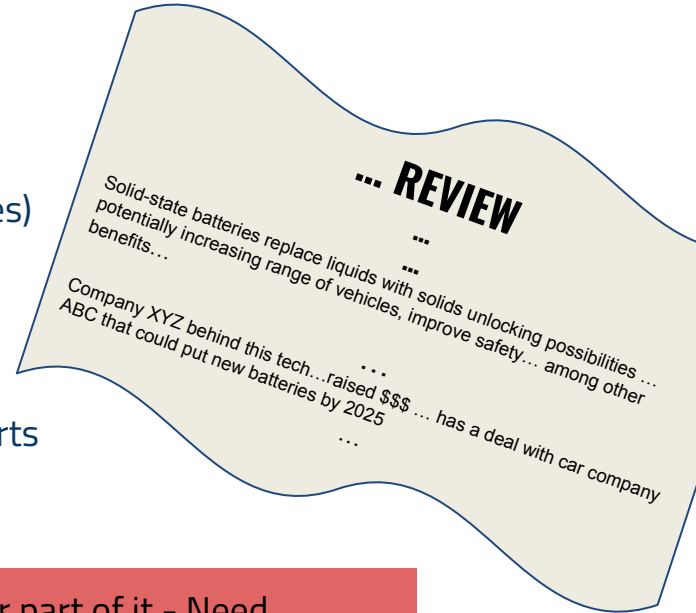
- Extracting Facts from Text into Knowledge (Fact) Graph - TextDistil tool
 - Graph Powered Search
- Auto-generated Fact Graphs from Dow/Factiva News
 - Configuring TextDistil pipeline to extract ESG facts from News
 - Impact of the work

PART 3

- Demo
- Q & A

Importance of Alternate Data

- **Controlled data:** Data self declared by companies without 3rd party oversight
- Controlled data is suspect, bit tainted! ('greenwashing' by companies)
- **Alternate data:** News, Social, etc. carries outside-in, objective, actionable information
- News is **Timely** and **Actionable** - stale by the time of quarterly reports or other curated reporting by concerned departments



Alternate ESG data volumes are **exploding**. TEXT is a major part of it - Need Automation to the rescue!

Importance of Text

- Text carries 'Knowledge' unlike pre-processed sources like DB, Spreadsheets, etc.
- Knowledge is **actionable**, besides News makes it **timely**
- Extracting from Text, taps Knowledge at the **source** (wo distortions!)
- Knowledge extraction from text remains a difficult problem! Much Knowledge is left unexploited



Large Language Models together with Semantic Technology enable accurate extraction of Facts which are already primed to be added into Enterprise Knowledge Graphs

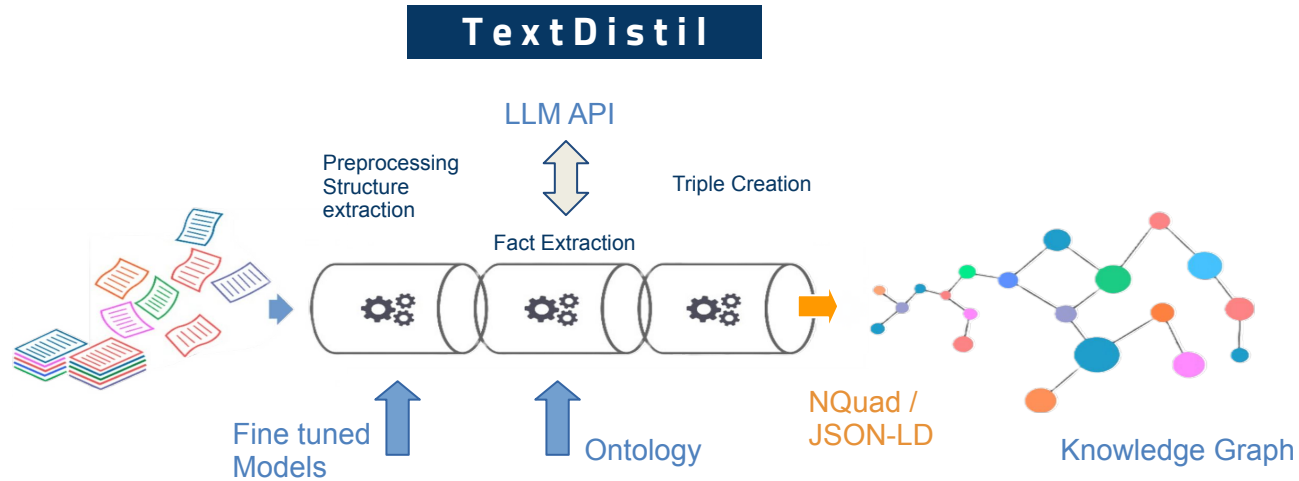
Benefits of Knowledge Graph Analytics for ESG

- Knowledge Graphs enable storing, processing **Knowledge** - user abstraction, stakeholder understandable
- Knowledge Graphs are flexible, support dynamic evolution (updates to ontology, dynamic facts)
- **Sustainability and ESG is vast, complex, evolving - No Standards**
- KGs integrate many types of sources and source data types - break down silos!
- Knowledge Graphs unlike RDBs store explicit **relationships**, track **context**
 - Simpler application development
 - Graph analytics
 - Graph search (vs other search)
 - Reasoning (auto-inferred facts) - **Semantic** Graphs

(technical reasons - ex: unique IDs, easy querying, de-silo ...)

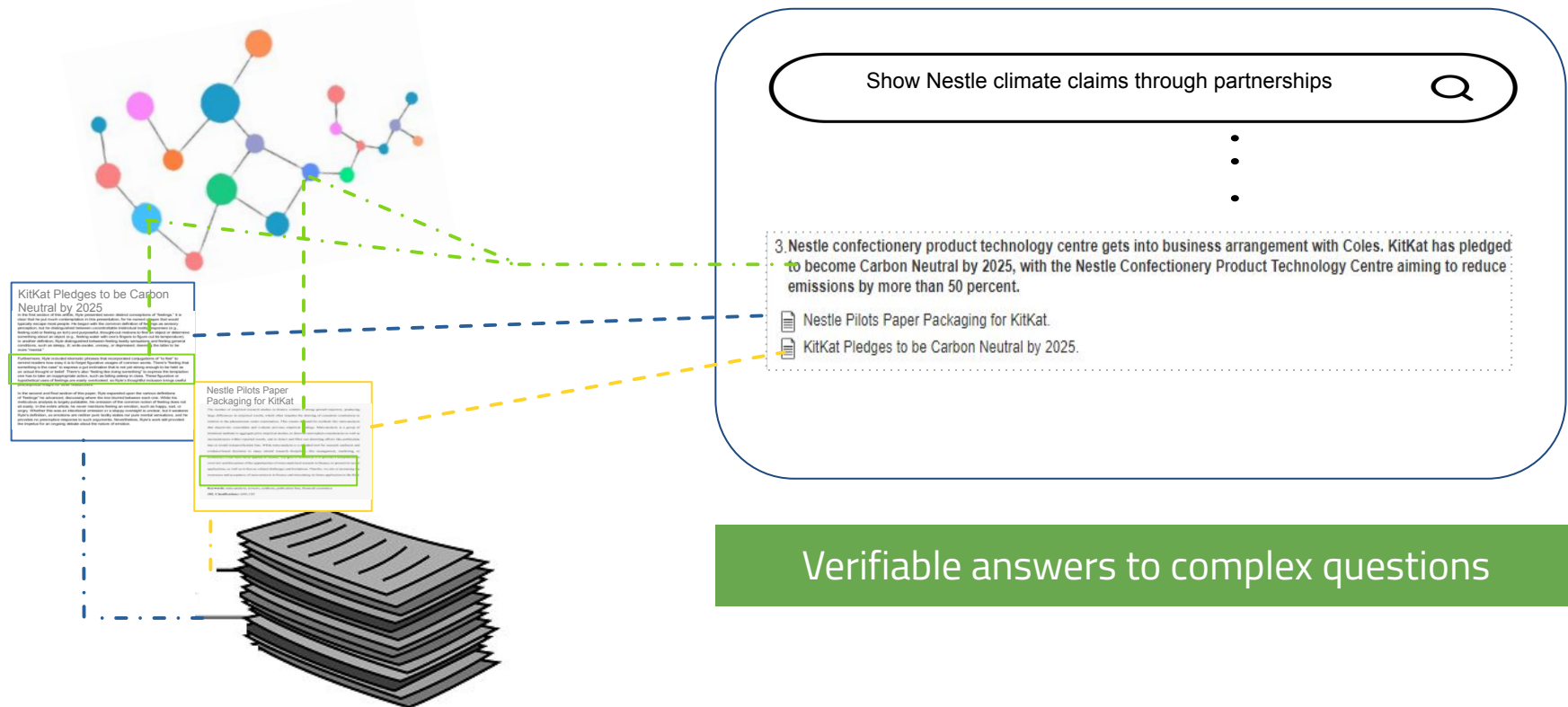


Graph of facts extracted from text



Knowledge Graph enables powerful Search & Query-API

Knowledge Graph powered SEARCH



Verifiable answers to complex questions

Knowledge Graph Search over Global News

Knowledge Graph Search over Dow Jones / Factiva News service

TextDistil on top of Dow/Factiva News Service

Knowledge Graph auto created from facts extracted from Global News

Domain Specific graphs based on Customer interest, for example: Carbon Emission claims, ESG Investments, climate events, corporate events, etc

Analysts, Researchers benefit from single click answers to complex questions against large corpora of Global News

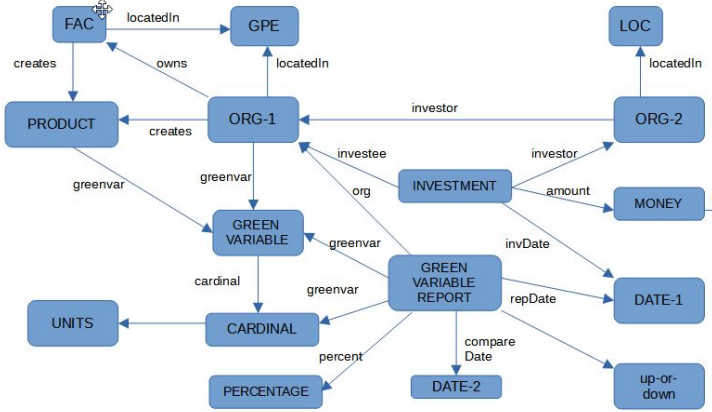
Configure TextDistil to extract ESG Knowledge from News

- **Inputs** - Text documents, **Outputs** - NQuad files, JSON
- **Models** trained on important variables (Green Variables, Organizations, etc.)
- Labelled Data based on Taxonomy
- **Target Ontology**

Vocabularies/ Synonym lists

	B	C	D	E	F
1	Biofuels	Biomass energy	Electricity	Energy/ Power	Fossil Fuel
2	biofuel	wood	CO2 free electricity	energy	fossil fuel
3	second generation biofuels	biomass	cleanelectricity	fossil energy	low carbon fuels
4	renewable diesel	waste	electrical	electrical energy	oil
5	sustainable aviation fuel	mine waste	electricity generation	energy projects	gasoline
6	SAF	plastic waste	electrification	affordable energy	crude oil
7	carbon-neutral eFuels	Land and biomass	electric power	power generation and storage	diesel
8	E85 flex fuel	polyethylene	electrical generation capacity	LNG Power	aviation fuel
9	ethanol	organic compost	electricity production capacity	power	fuel
10	ethanol production capacity	mixed plastic waste	electricity generated	power consumption	petroleum products
11	ethanol production	waste plastics	electricity consumption	power generation	Oil and Gas
12	biogas	solar-panel waste	battery	energy consumption	Crude oil production
13	E15 blended gasoline	plastics	battery storage	energy generation	oil equivalent
14	ethanol capacity	organic waste	electric vehicle battery	power supply	fossil-fuel
15	grey hydrogen	electricity from waste	electrical power	power density	motor fuel
16	biomethane production	electricity from biogas	production of electricity	energy density	marine bunker fuels
17	biomethane	dump	consumption of electricity	Round The Clock power	petrol
18	Bio-LNG	plastic	electrical consumption	Flexible Power	oil consumption
19	e-kerosene	wastewater	electric	energy use	Fuel consumption
20	carbon-neutral kerosene	virgin plastic	electricity capacity	energy intensity	diesel fuel
21	cellulosic ethanol	Production of polyester	heat and electricity consumption	Power and energy	petroleum
22	HVO hydrotreated vegetable oil	trash	high electricity usage	energy storage	oils
23	biodiesel	municipal waste	total electricity generation capacity	adsorption energy	Shale oil and gas field
24	clean fuel	biochar	electricity consumption per capital	power capacity	oil production
25	clean fuels	waste and sewage	net electricity consumption	power generation capacity	Oil and Gas Production
26	fuels SAF	BioEnergy	electricity generation capacity	energy supply	crude oil spill
27	green fuel	biomass electricity generation	battery energy storage	Energy Resources	jet
28	green fuels	e-methanol	zinc-air batteries	energy savings	unblended gasoline
29	Green Gas	green e-methanol	batteries	high energy density	fuels
30	green hydrogen fuel	industry waste	grid-scale battery	Total energy transmitted	Gasoil
31	low-carbon biofuels	methanol	battery storage capacity	power production	hydrocarbon oil

Extraction Graph



Impact of Work

- Extends analysis based on **verifiable results** to vast (limitless) number of documents. Frees up time for **decision-making** with confidence
- Enables **deeper analysis** by tracking **granular relationships** between entities and properties such as Organizations, People, Products, Money, Quantities (ex: 800 metric tons) etc.
- Extracted Fact Graph enables **TWO high value workflows**
 - Graph based **Verifiable Search** provides instant decision support
 - Knowledge Graph - Create or extend Knowledge Graph with Facts (aligned with target ontology) and ingested into an Enterprise Knowledge Graph
 - Rich KG Applications, Flexible Querying, Event detection, etc.



Demo

<https://textdistil.ai>

Let's keep in touch

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