

Leveraging AI for ESG investing

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Among the key challenges of [ESG analysis](#) are data gaps and information quality. [Artificial intelligence](#) (AI) is now being used increasingly to mitigate these challenges, while reducing information processing time, to enable ESG analysts and investors to focus more effectively on deep-dive ESG research and engagement activities. We expect financial institutions to outsource most of these AI-driven ESG analytics to third-party service providers with expertise in the AI and ESG domains and well positioned to develop cost-effective, customised solutions.

ESG analysis faces data-/information-related challenges

With ESG-related elements now becoming mainstream in investment-decision making, there is an increasing need for quality and real-time ESG analysis. However, data limitations in the form of

- (1) unstructured or incomplete data,
- (2) the availability of more qualitative and ambiguous information,
- (3) delayed information flow,
- (4) changes in reporting patterns of companies, and
- (5) different [reporting templates](#)/structures are making it difficult for investors/analysts to carry out meaningful, accurate and timely analysis.

AI/NLP enabling resolution; a range of use cases

To effectively resolve some of these data-/information-related challenges, a number of ESG solution providers and customers are now relying on [natural language processing \(NLP\)](#), a field of AI. This helps investors scan and analyse large quantities of unstructured ESG data. The algorithms can scan many years of sustainability reports and millions of articles in real time, sift through the information, and classify it at a much faster pace than analyst teams can, making the process more time- and resource-efficient. An AI company TruValue Labs claims that its analysis of the automotive sector over a year using AI would have taken a human analyst almost six years . Some of the NLP applications in ESG investing are summarised in Figure 1.

Figure 1: Some broad applications of NLP in ESG Investing

Application	Output/benefit
Data combing	Algorithms scan the sustainability reports, annual reports, company filings, news articles and other data sources to classify information on ESG parameters, making the ESG analysts aware of the available information and avoid any slippages
ESG Controversies	Algorithms scan the news articles, regulatory reports, NGO reports, and available information from independent sources to flag warning signs or company related controversies, which will be further scrutinized / investigated by the ESG analysts /investors for their business impacts
Green / Social washing	Algorithms scan various information sources for more granular ESG data to identify green washing or social washing, which is considered to be widely prevalent in the domain
Sentiment analysis / Opinion mining	Algorithms are trained to read and analyse company results and management discussions by comparing words used during the communication versus a reference information set. Based on the words in the company's transcript, the algorithm makes an inference about management's view on various ESG parameters
Monitoring ESG trends	Analyze news feeds, earning calls, company filings and other publicly available information to monitor developments related to ESG themes across stocks lists or portfolios

Source: Acuity Knowledge Partners

AI investments for ESG analysis are set to grow

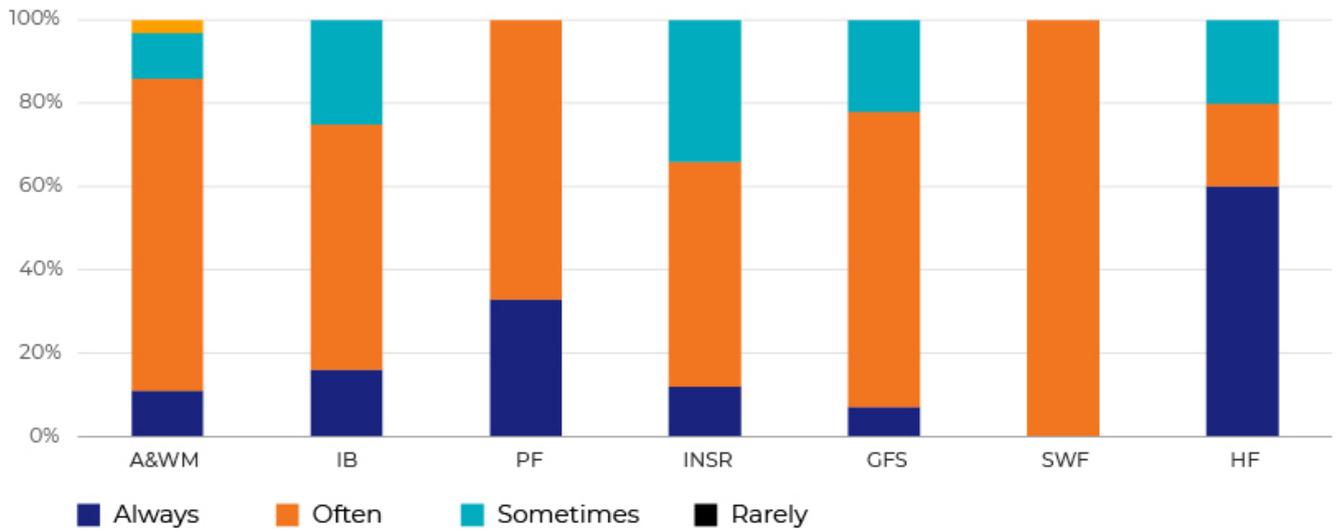
The Economist Intelligence Unit asked investors in 2019 how often AI was used specifically for ESG investing. The responses varied by investor type. Pension funds and sovereign wealth funds had the largest share of cumulative responses in the “always” and “often” categories, whereas insurance and reinsurance companies appeared to have the lowest share (refer to Figure 2 for details) . More such [surveys](#)/engagements with stakeholders from financial institutions reflect a growing focus on AI-/NLP-driven ESG investment decision making.

In 2018, an S&P subsidiary Greenwich Associates interviewed 30 CIOs, [portfolio managers](#) and investment analysts across North America, [Europe](#) and [Asia](#) to get their views on the evolution of [investment research](#) over the next 5-10 years. It concluded that many investors expect to increase their use of research from independent providers, and to integrate [alternative data sources](#) in their investment process. Around 40% of the respondents expected to increase their budget allocation for AI .

A US-based AI company Databricks held an online technical workshop in September 2020 titled “Data + AI in the World of ESG” that included attendees from large global financial institutions. When asked about whether their ESG strategies leverage data and AI, around 30% of them responded in the affirmative .

With ESG analysis now a focus area of investors and with many investors not fully satisfied with the ESG data/information quality, the segment share of AI budget allocation is likely to grow, in our view. Most of these investors are likely to outsource the development of these AI-/NLP-driven ESG analytics to third-party vendors providing cost-effective and quality output, combined with their expertise in the AI and ESG domains. The available output would enable ESG analysts and investors to focus on higher-value activities such as deep-dive ESG research and company engagement.

Figure 2: How often is AI being used specifically for ESG investing?



Source: The Economist Intelligence Unit, Note: A&WM- Asset & wealth management fund, IB - Investment banks, PF - Pension funds, INSR - Insurance and reinsurance companies, GFS - Global financial services firm, SWF - Sovereign wealth fund and HF - Hedge funds

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We empower our clients to drive revenues higher. We innovate using our proprietary technology and automation solutions. We enable our clients to transform their operating model and cost base.

