

TOOLS FOR MODERN RENEWABLE ANALYTICS

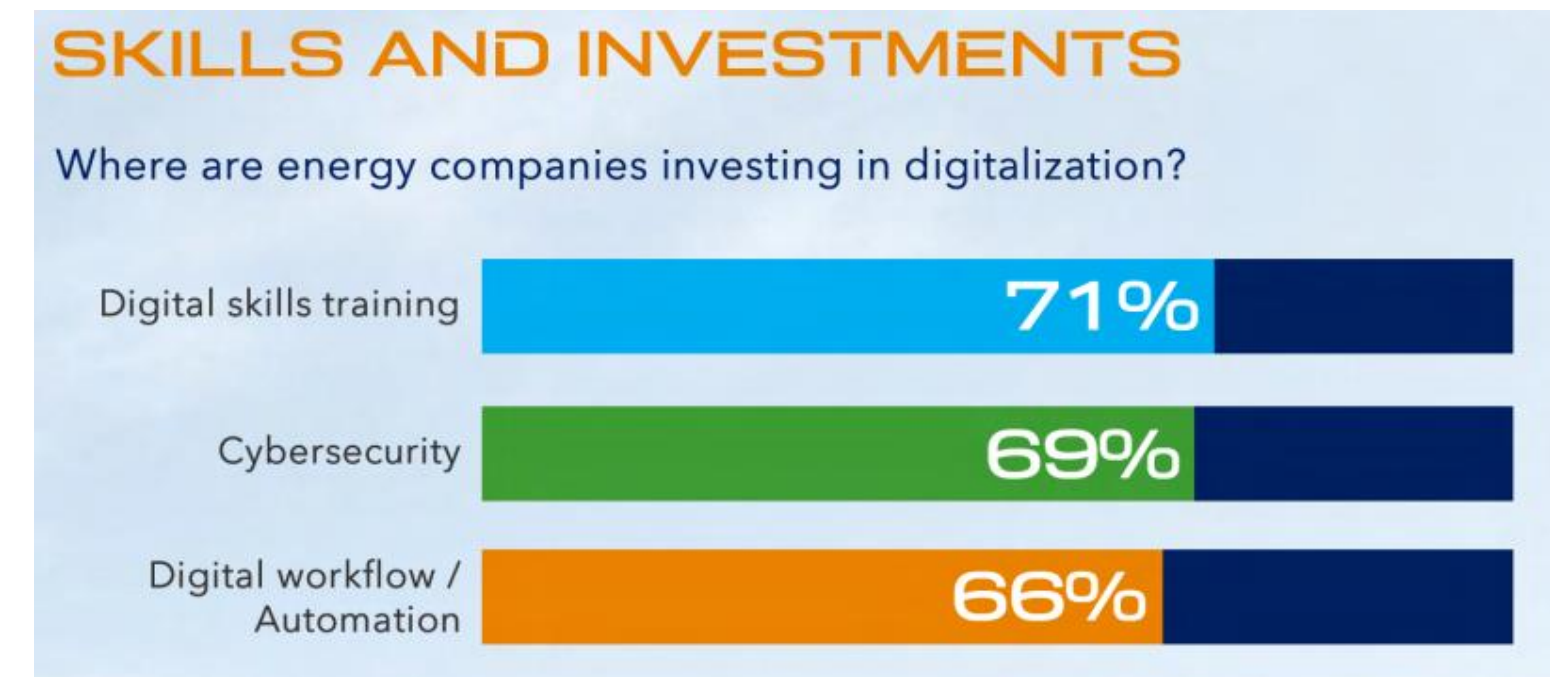
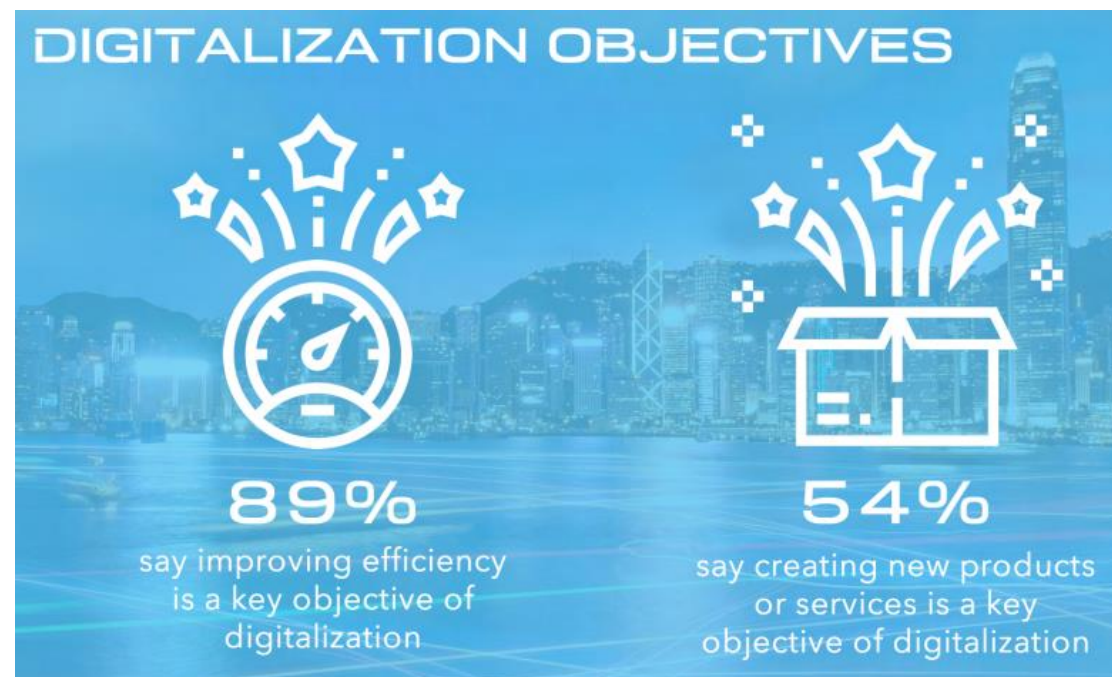
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01. INTRODUCTION

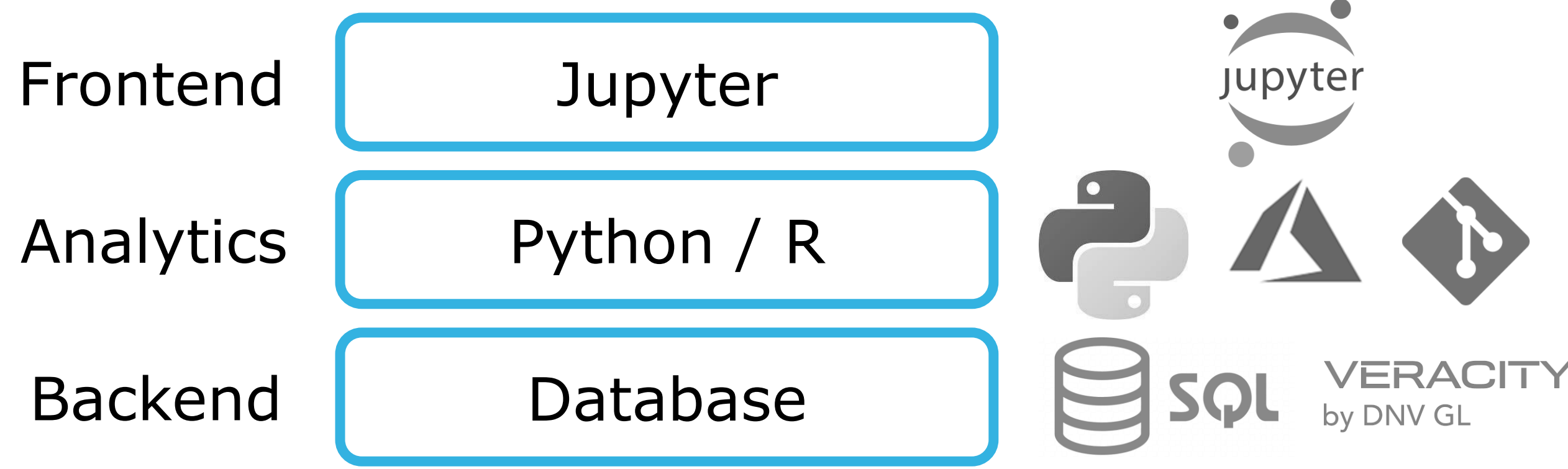
- Primary goal of renewable analytics: Get from data to understanding, knowledge, and insight with minimal processing time.
- Leverage modern tools to achieve this goal in a way that can be scaled across global regions and services.
- This problem can be addressed with technology but even more so it is a change-management and community-migration problem.

02. WHY AND HOW

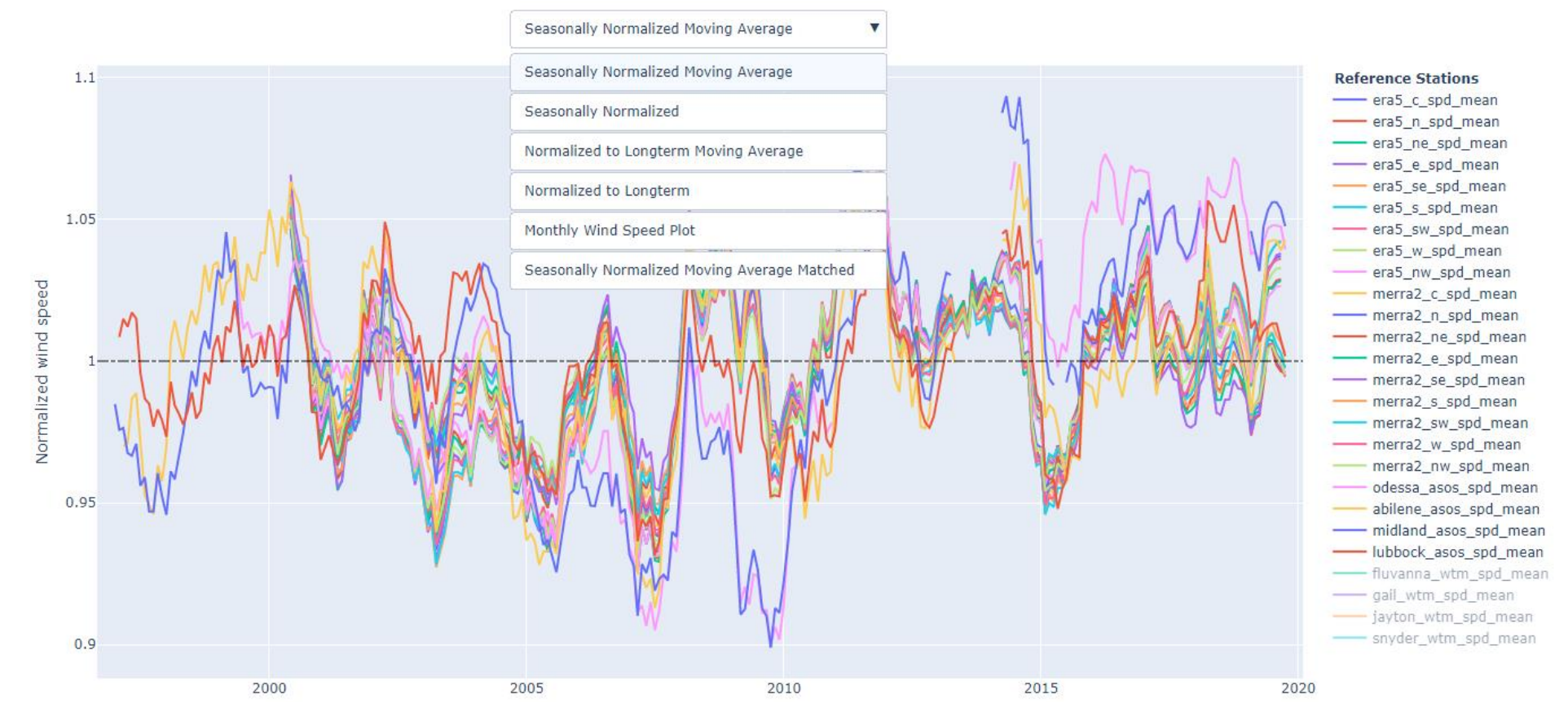
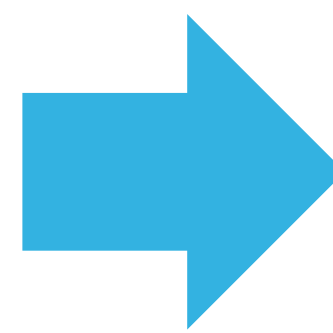
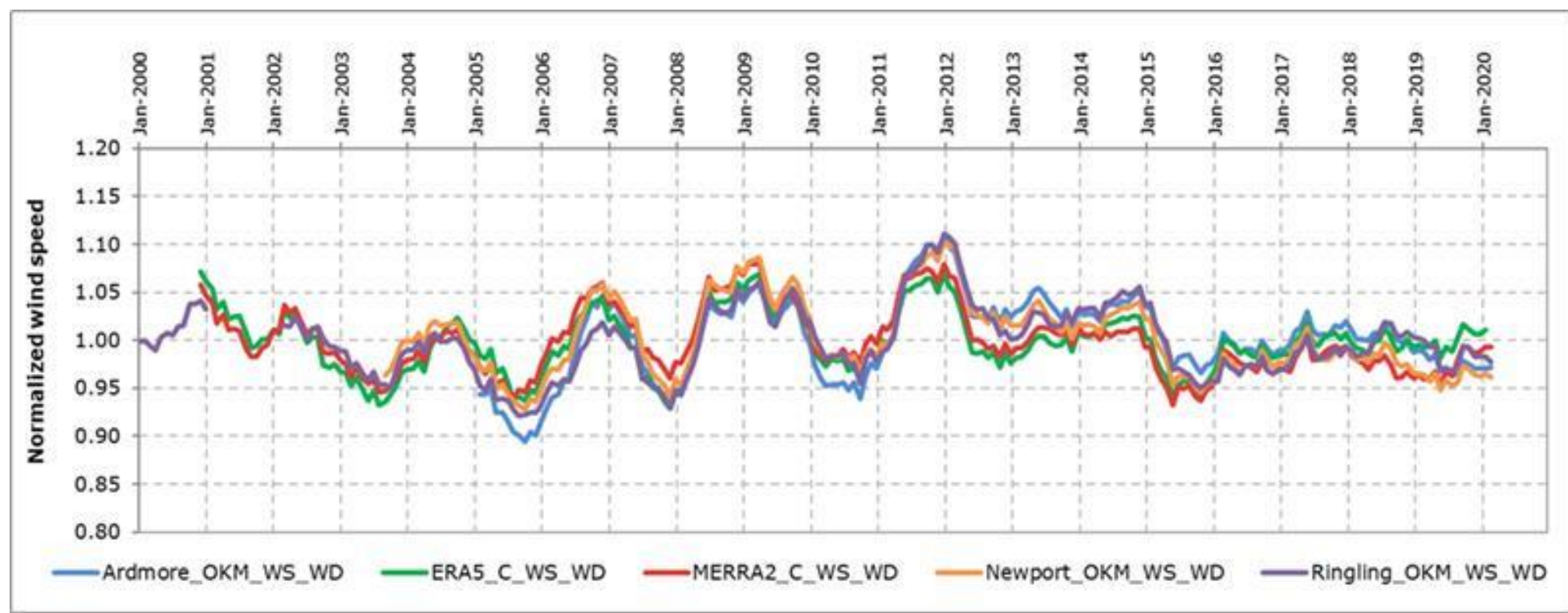
- Facts from [DNV GL's Digitization and the Future of Energy Report](#):



- Adopt clean architecture where the backend is separate from the frontend via an analytics layer.



- Replace Excel with a centralized analytics toolbox that can be automatically distributed to analysts, globally.

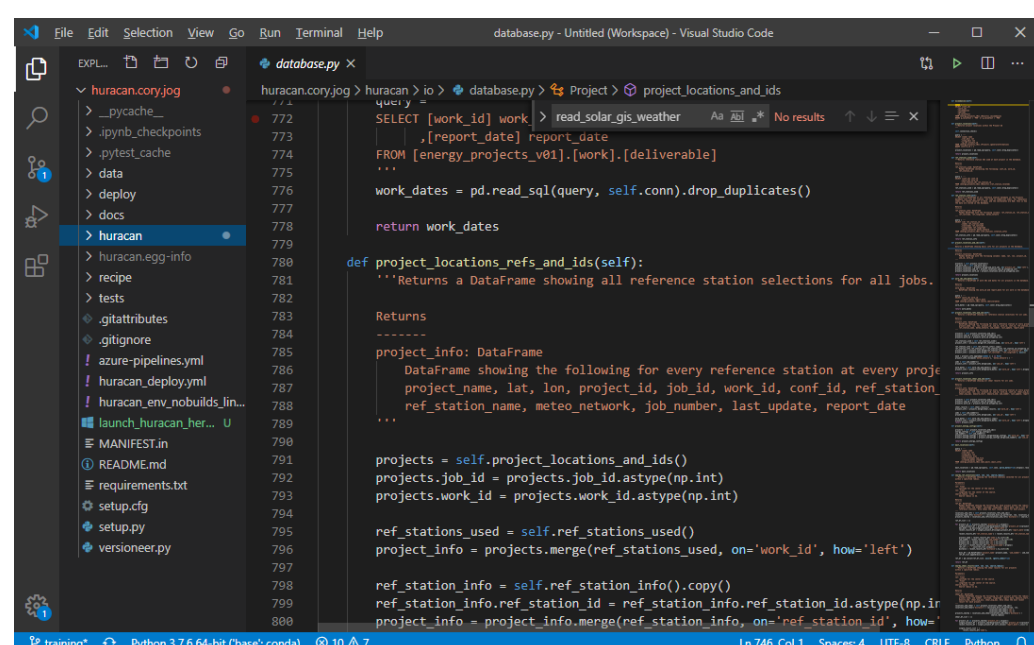


Interactive, automatic, easily explored

- Benefits of centralized, modular, open-source code:
 - Free to install
 - Write once and reuse
 - Update and maintain tools in one place
 - Approximately 80% less time and effort to develop new capabilities

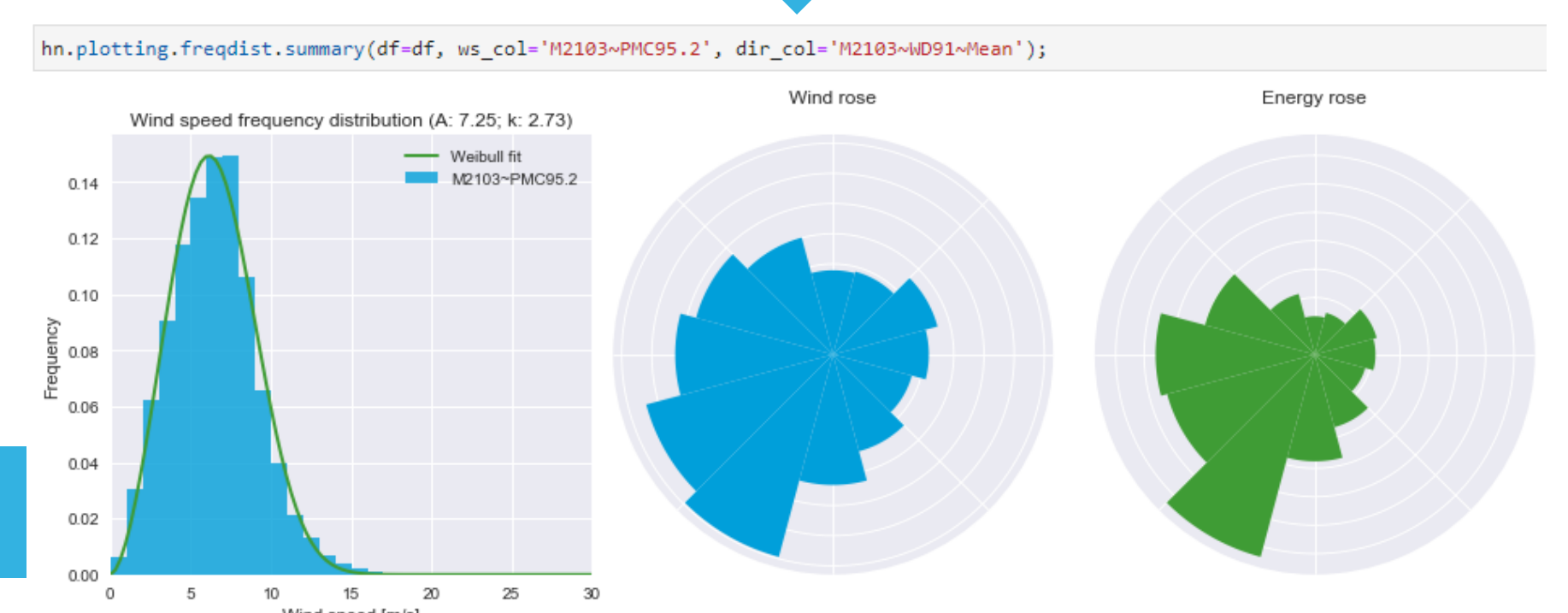
03. VERSION CONTROL, UNIT TESTS, CONTINUOUS INTEGRATION AND DEPLOYMENT

- Steps to develop and update tools and templates using new infrastructure:
 - Analyst codes a new capability, such as a new correlation method
 - Analyst submits new code and associated tests to shared Git repository on Azure DevOps
 - Code is reviewed and approved online by package maintainers
 - Entire codebase is automatically tested to ensure nothing was inadvertently changed
 - Codebase is packaged and deployed to a central server every two weeks
 - By clicking on an installer, global team can automatically update their tools and templates to the most recent versions



- ✓ All required checks succeeded
Optional check succeeded
- ✓ 1 reviewer approved
- ✓ No merge conflicts
Last checked 5h ago

- Tools and processes require 80% less time to maintain compared to Excel
- Supported new services such as:
 - [Solar Resource Compass](#)
 - [Stochastic Engine](#)
 - Windicative



04. CONCLUSIONS AND NEXT STEPS

- DNV GL has adopted modern analytics tools to speed up the delivery associated with renewable analytics to better support digital transformations.
- Next steps: Migrate tools to the cloud and distribute throughout the organization to support all types of services and deliverables.