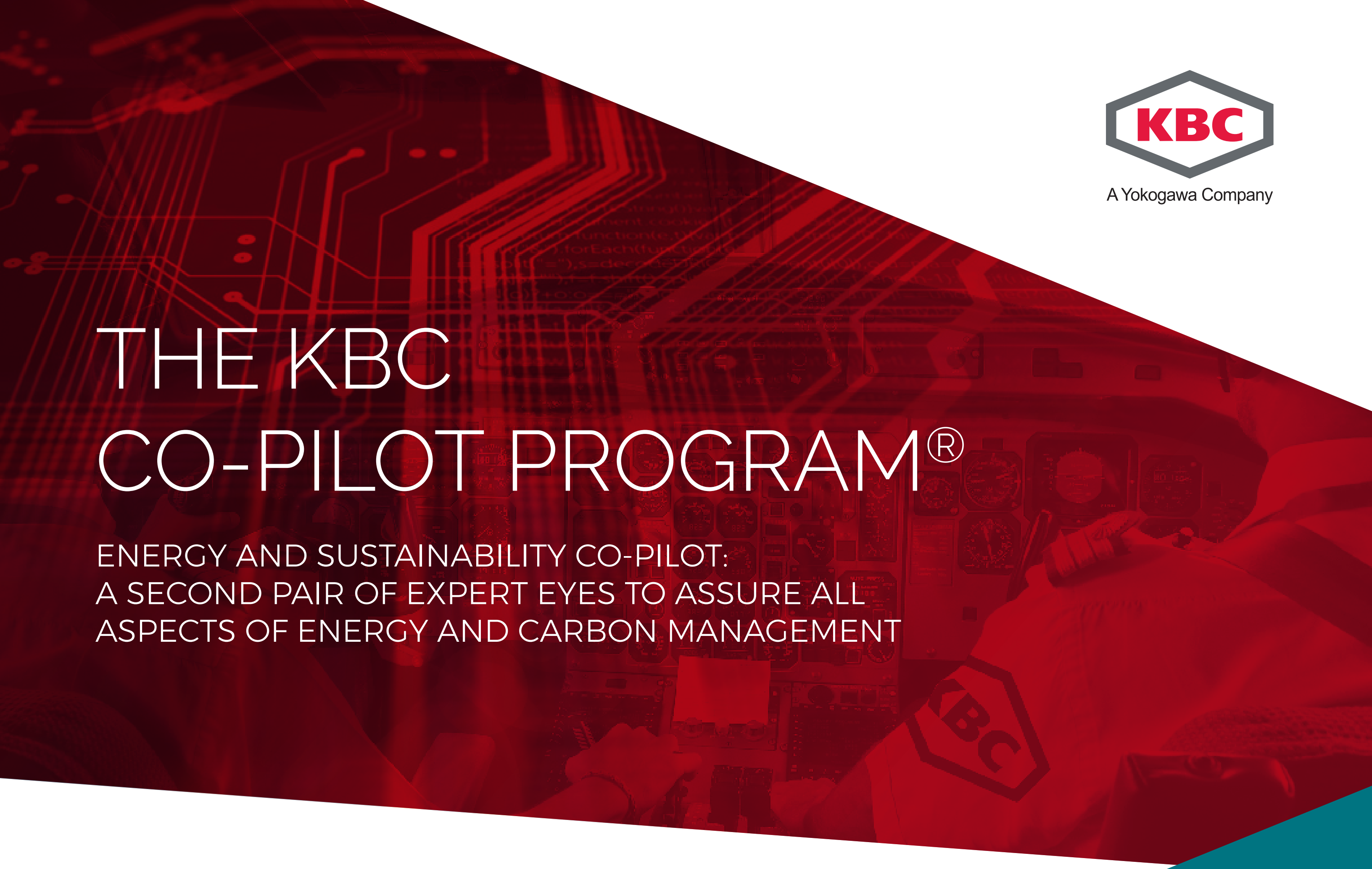

KBC
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THE KBC CO-PILOT PROGRAM®

ENERGY AND SUSTAINABILITY CO-PILOT: A SECOND PAIR OF EXPERT EYES TO ASSURE ALL ASPECTS OF ENERGY AND CARBON MANAGEMENT

The KBC Co-Pilot Program is a unique package of cloud-based services to ensure that our clients achieve sustained energy performance . Co-Pilot brings together KBC's world-leading suite of supply and demand side energy technology, with the experience of our global expert team, using the cloud to focus on maximizing the potential from your facility.

Just as the co-pilot of an aircraft is there to assist the pilot with additional knowledge and to step in and help at times of intense activity, the KBC Co-Pilot is there to remotely support your facility with our expertise, insight and technology, supplementing the client's own capabilities and resources. Using the latest secure cloud-based technologies, the KBC Co-Pilot assures that your facility will always achieve its full potential.

10/10

ALL of the top 10 oil and gas companies in North America and Europe use our IIoT solutions.

Achieving full potential requires constant expert attention

Energy efficiency is the largest controllable operating cost, and large scope for improvement exists even in top performers, however it is challenging to sustainably improve energy performance:

- Energy and production or yield affect each other which requires full consideration of demand side impacts in any energy management system
- Energy systems are highly integrated and changes impact the whole site
- Human behaviors are key, but skills are being lost as experienced staff retire, operation and engineering teams are becoming increasingly lean, and there is a gap in the ability to use and maintain new digital technologies.

These factors contribute to increased difficulty in achieving plans or targets, and in maintaining profitability and competitiveness. The KBC Co-Pilot is here to help. KBC's experts come from the industry and have decades of practical experience. Our world-leading software optimizes the supply, demand and re-use of energy. Our Industrial Internet of Things (IIoT) solutions are proven over 20 years to securely bridge the time and distance from your facility to our experts and technology.

Digital twin of your facility: Models always up to date; Experts always available

Co-Pilot creates a live digital twin of your process facility in the Cloud, using our IIoT and simulation technology. This live digital twin is then available through the Co-Pilot portal for KBC experts and the clients' key stakeholders. This allows facility management and engineering to clearly see and understand performance and, in collaboration with KBC experts anywhere in the world, to identify any opportunities for further improvement.

Once changes are agreed and acted upon, Co-Pilot will track economic improvement against a base case established at the Co-Pilot kick-off.

A structured approach

The KBC Energy and Sustainability Co-Pilot is ideally suited to the following situations:-

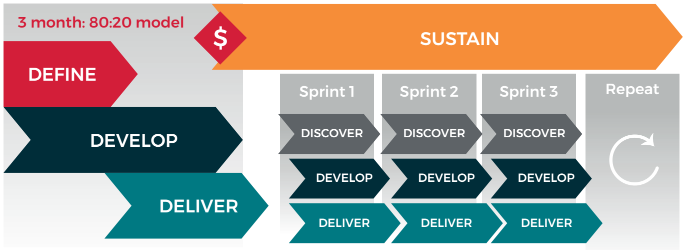
- Energy costs adversely impact plant competitiveness
- Carbon taxation or reduction mandates threaten the plant's license to operate, or investor or community perceptions of the business
- A short-handed technical workforce is unable to maintain world class energy management software tools or consistently implement their outputs
- Production process performance and energy performance are tightly interlinked and need to be managed holistically.

How does a Co-Pilot engagement work?

Co-Pilot begins with an initial set-up of an 80:20 model, designed to start delivering real value as quickly as possible:

- Kick-off meeting with key stakeholders to understand the facility operating philosophy and base-line operation
- Mirroring of process, economic and equipment data to KBC's private cloud
- Set-up of the 'Co-Pilot.com' web portal and development of digital twins using Visual MESA, Petro-SIM and HX-Monitor software
- Workshops to help you understand how Co-Pilot will fit into your existing work processes, and to train and bring on board site personnel who will interact with the service.

Co-Pilot agile delivery



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Then, Co-Pilot becomes a subscription service, based on our agile 4DS framework (define, discover, develop, deliver, sustain). Each month the team determine what activities will add the greatest value. This could include:

- Support in implementing identified opportunities
- Enhancing and developing the level of detail in the model
- Evaluating minor capital projects
- Responding to issues that have arisen on plant. saving and reduced maintenance costs.

Our flexible service will always be tailored to your changing needs, keeping the systems and tools constantly up to date and delivering sustained energy and emissions improvements.

Significant economic returns

The value created will result in significant economic returns of at least ten times that of the investment. This is achieved through:-

- Reducing the cost of power and steam supply, via real-time utilities optimization – typically worth 2-5% of site energy costs
- Optimizing cleaning costs and minimizing energy loss due to fouling – typically 1-2% of site energy costs
- Minimizing energy demands whilst meeting process requirements – typically 3-5% of site energy costs
- Identifying opportunities for capital investment to save energy – typically 10-15% of site energy costs
- Eliminating production constraints due to energy systems – if present typically 2-3% increase in production on key units.
- Reducing carbon emissions by 10-15% overall.

Choose the solution to meet your needs

Co-Pilot is a modular program of services, which allows you to select the most appropriate solution for your needs.

Basic model assurance

- Constant monitoring of IT systems
- Daily monitoring of data and model issues to ensure optimizer is always running and solving

Enhanced model assurance

- Update model in response to changes in physical hardware on site
- Update correlations and performance curves
- Monthly reports and recommendations on model condition

Energy performance and equipment assurance

- Review success in implementing optimizer recommendations
- Ensure full range of degrees of freedom exploited
- Review equipment trends and degradation, make recommendations on operation, cleaning and maintenance
- Support troubleshooting

Strategic energy assurance

- Carry out energy forecasts and look ahead scenarios
- Review and analyze energy performance gaps across site
- Recommend minor / major investment projects to debottleneck and improve energy efficiency
- Review progress vs recommendations and quantify value of Co-Pilot

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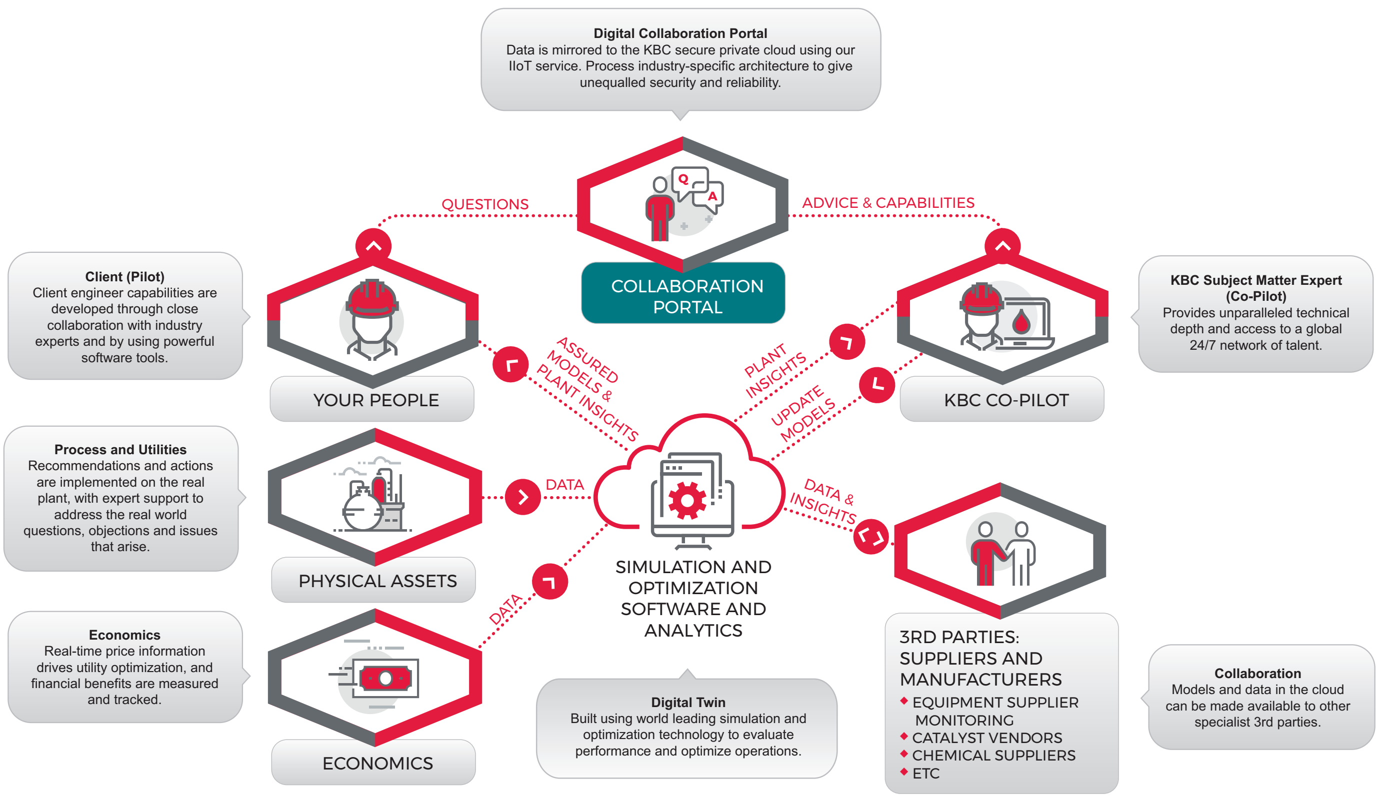
How Co-Pilot works



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KBC, a wholly-owned subsidiary of Yokogawa Electric Corporation, is all about excellence in the Energy and Chemical Industry. We make excellence real for our customers through the actions of our people fused with our technology and best practices, powered by the cloud. Our customers achieve operating performance that surpasses ordinary standards, now and into the future.