**Page EEPROM
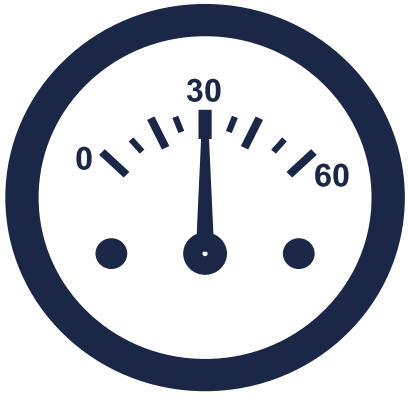in smart meters**

What is a smart meter?

Smart meters are digital devices that monitor **electricity, gas, water, or heat consumption**.

They also **transmit data** from the meter to the data concentrator or the cloud.

What is a smart meter?

With smart meters, **energy distributors** can manage their supply and demand **in real time**.
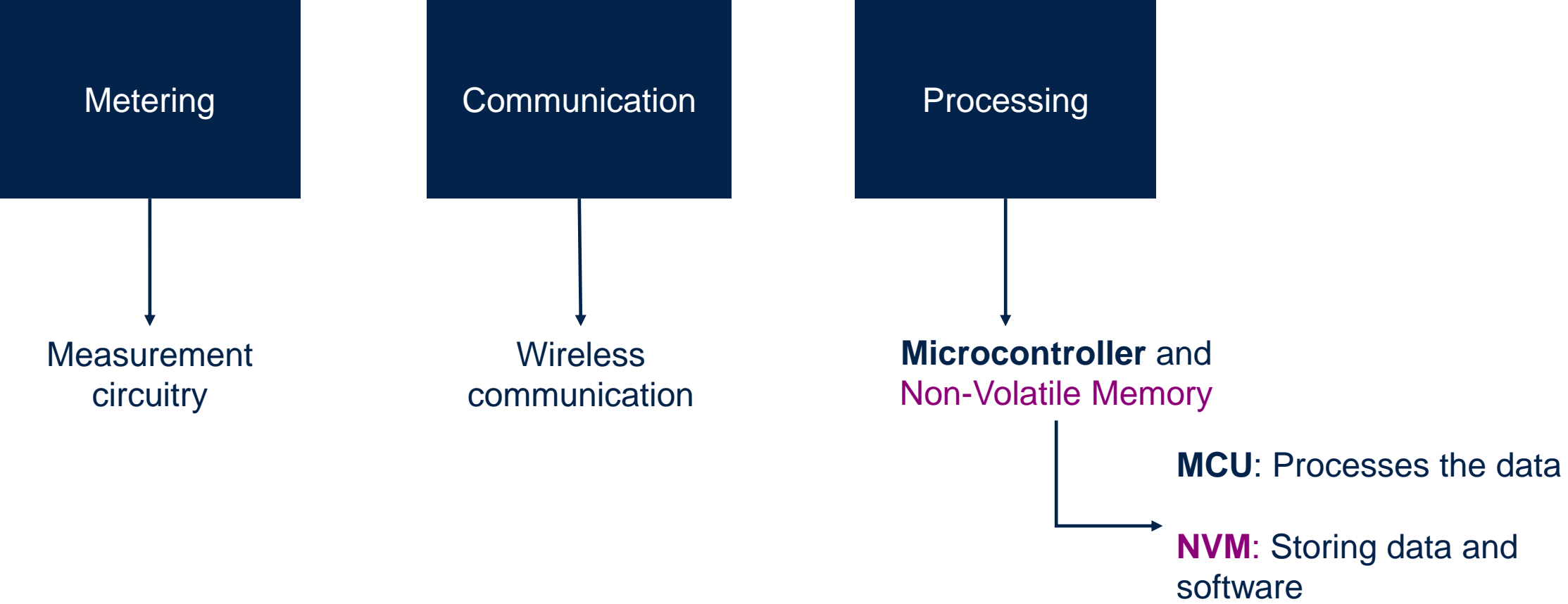
Benefits

Lower costs

Higher reliability

Increased safety

Fewer carbon emissions

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NVM in smart meters

Metering	Communication	Processing

Measurement circuitry

Wireless communication

Microcontroller and
Non-Volatile Memory

MCU: Processes the data

NVM: Storing data and software

	Pros	Cons
Embedded flash	Firmware management No external memory	Datalogging Memory density
Serial Nor Flash	Memory density Firmware management	Datalogging
EEPROM	Datalogging Low power	Memory density Firmware management
Flash + EEPROM	Low power Memory density Datalogging Firmware management	PCB size Cost (x2 NVM)
FRAM	Ultralow power Memory density Datalogging Infinite endurance	Very high cost

	Pros	Cons
Embedded flash	Firmware management No external memory	Datalogging Memory density
Serial Nor Flash	Memory density Firmware management	Datalogging
EEPROM	Datalogging Low power	Memory density Firmware management
Flash + EEPROM	Low power Memory density Datalogging Firmware management	~~PCB size~~ **Moderate cost (x1 NVM)**
FRAM	Ultralow power Memory density Datalogging Infinite endurance	Very high cost

Page EEPROM

Page EEPROM in smart meters

Page EEPROM offers the **most flexible NVM solution** for smart meter devices:

End-user	More data collected	Smarter application
	Battery life-time extended	
Designer	Easy datalogging	Implementation made easy
	Flexibility	
Cost	BOM reduction	Cost control

Page EEPROM in smart meters

Page EEPROM offers the **most flexible NVM solution** for smart meter devices:

Firmware management	80 MHz Quad-SPI interface 512 bytes program in 1.5 ms Ultra fast block erase in 4 ms	**Fast firmware download FOTA downtimes reduced**
Datalogging	500k write cycles per page Byte write granularity	**Easy datalogging implementation High monitoring rate**
Ultralow power	Current peak control below 3 mA Deep power down < 1 µA	**Fit tiny battery-operated systems Longer battery lifetime**

Page EEPROM in smart meters

Page EEPROM offers the **most flexible NVM solution** for smart meter devices.

Fast as a Serial flash, reliable & robust as an EEPROM

Page EEPROM mixes **firmware management, datalogging**, and **ultralow power** performance

It can replace both EEPROM and Serial Nor Flash and reduces BOM cost

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Our technology starts with You

🌐 Find out more at www.st.com

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