Venice, Italy is in peril.

Models suggest the sea level here could rise more than 40 inches by the end of the century.

It would seem the future of this remarkable city is bleak.

But now there is hope.

After nearly 20 years of construction and some $8 billion.

A network of enormous flood barriers called the MOSE is in place.

It is designed to block the floodwaters before they reach the city.

In charge is Elisabetta Spitz.

- The MOSE is a masterpiece of Italian engineering.

It has required so much labor, so much research, so much testing.

The scale of this project is immense.

78 individual gates are arranged in four barriers that each stretch over 1,100 feet across the inlets to the lagoon.

So the barriers are only lifted when a flood endangers Venice.

Each gate is colossal, approximately the size of two tennis courts.

- These gates are fixed to concrete beds sitting on the bottom of the sea.

The gates are full of water, which weighs them down and keeps them lying flat on the sea floor until the team injects compressed air through a system of valves.

- Air is pumped into the gates and they slowly rise and emerge from the sea.

Then they join together and hold back the high tide.

Most floods last fewer than four hours.

So once the threat has passed, the team can lower the barriers.

The MOSE is still in its testing phase.

The team is perfecting how to operate the barriers when an aqua alta threatens the city.

- This project needs to work perfectly.

Water cannot pass through.