



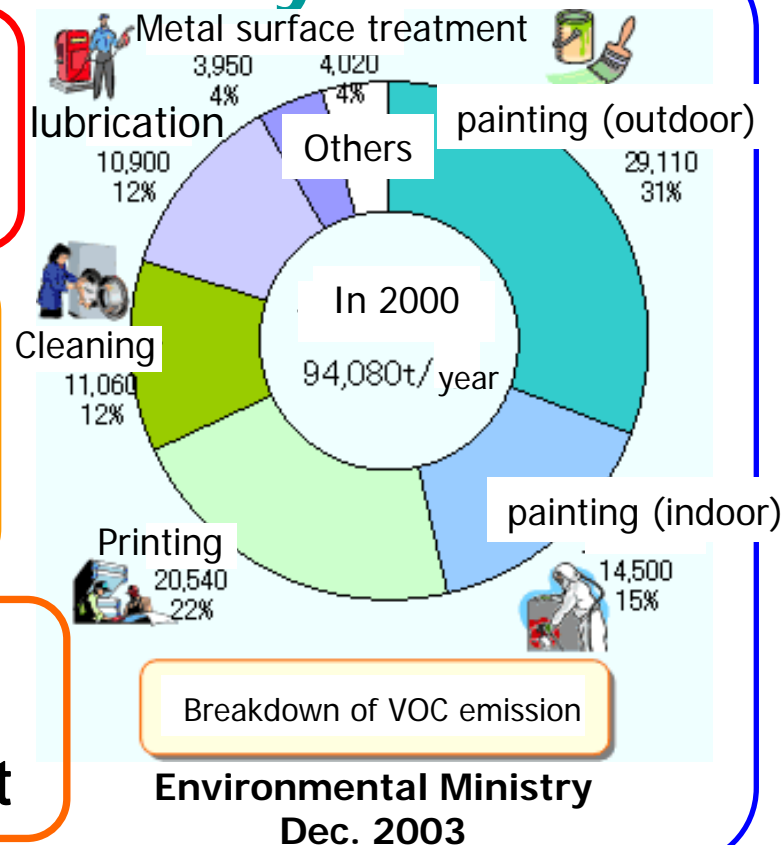
VOC in the Printing Market

TARGET: 30% VOC cut by 2010

printing industry
second-largest VOC generator

In 2006
Reviewed Air Pollution
Control Law in Japan

By 2010
Target: 30% VOC emission cut

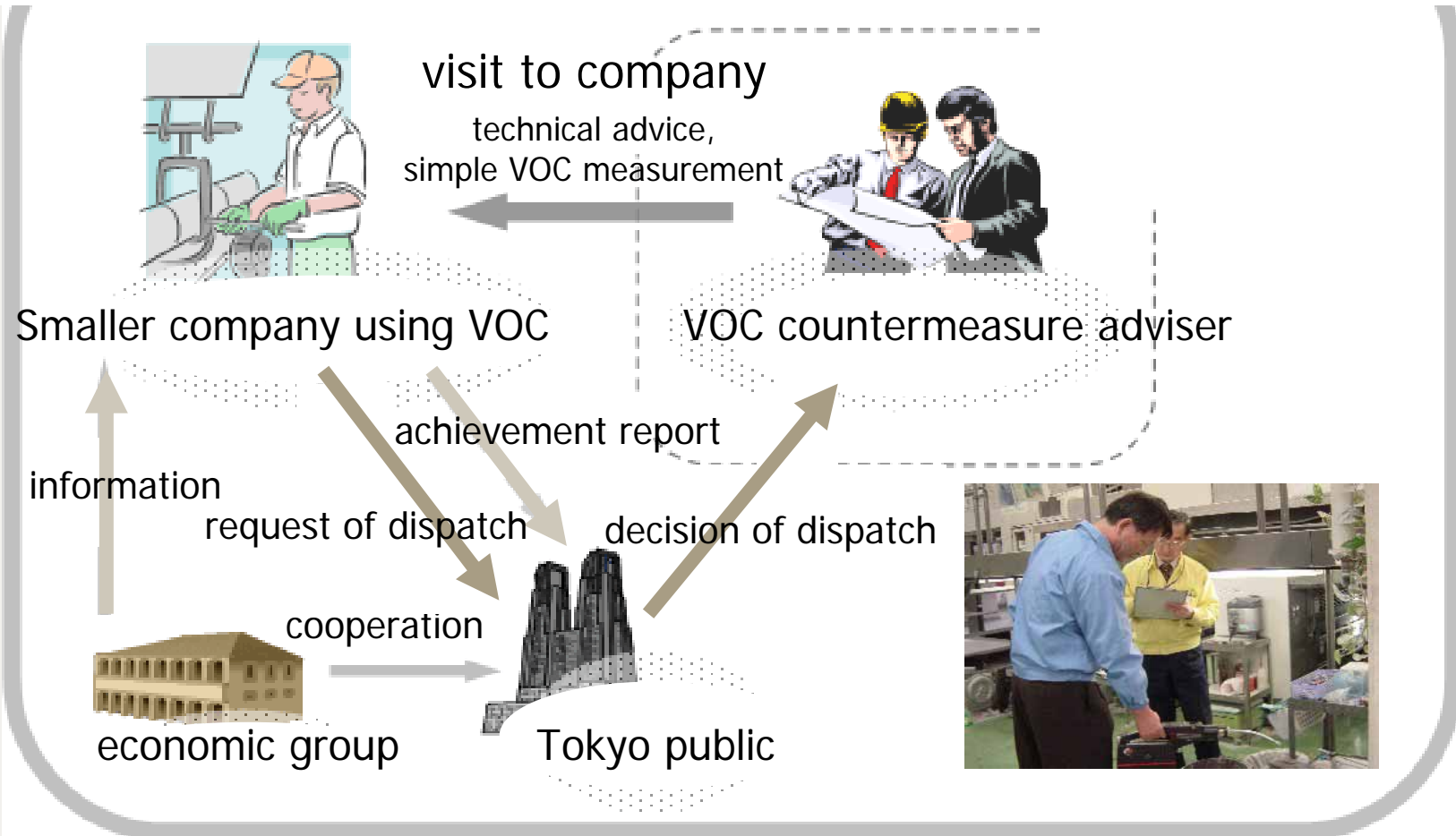


The rules for VOC are getting more stringent



” VOC countermeasure adviser” by Tokyo environmental agency

Support self- action for decreasing VOC



Waterless printing is introduced by 'Guide for decreasing VOC' as a VOC restriction method.



Decreasing VOC emission by waterless at Bunseikaku

60~80% VOC emission cut in comparison to conventional printing

Waterless printing can cut VOC emission 60~80%, according to "Institution of VOC countermeasure adviser" supported by Tokyo environmental agent

	conventional	waterless
between units	510	100
above dampening water unit	920	-
delivery unit	260	105
air-fan at printing room	432	88

ppmc: emission density (per million of capacity ratio by carbon reduction)

Data by "institution of adviser for decreasing VOC emission in Tokyo"



adviser team from Tokyo public and service at Bunseikaku

Waterless printing does not cause waste solution.

Also, it is possible to decrease VOC emission to a large degree.



Decreasing VOC emission by waterless at Bunseikaku

Main cause of VOC emission

washing oil : 500 ~ 4000 ppmC

I P A : 1000 ~ 10000 ppmC

ink : 100 ~ 150 ppmC

*high VOC emission measured from fountain solution which is alternative to IPA



Waterless printing is the only solution for a total VOC emission decrease.



Decreasing VOC emission by waterless at BUNSHODO

“Happy Environment” by using only waterless printing

VOC emission was very low and at some places the value was almost 0 ppmc. Tokyo Environmental Agent expressed Bunshodo as “Happy environment.”

When “News plus one” featured the VOC countermeasure for repainting of Tokyo Tower, waterless printing was introduced as a printing method for decreasing VOC emission.



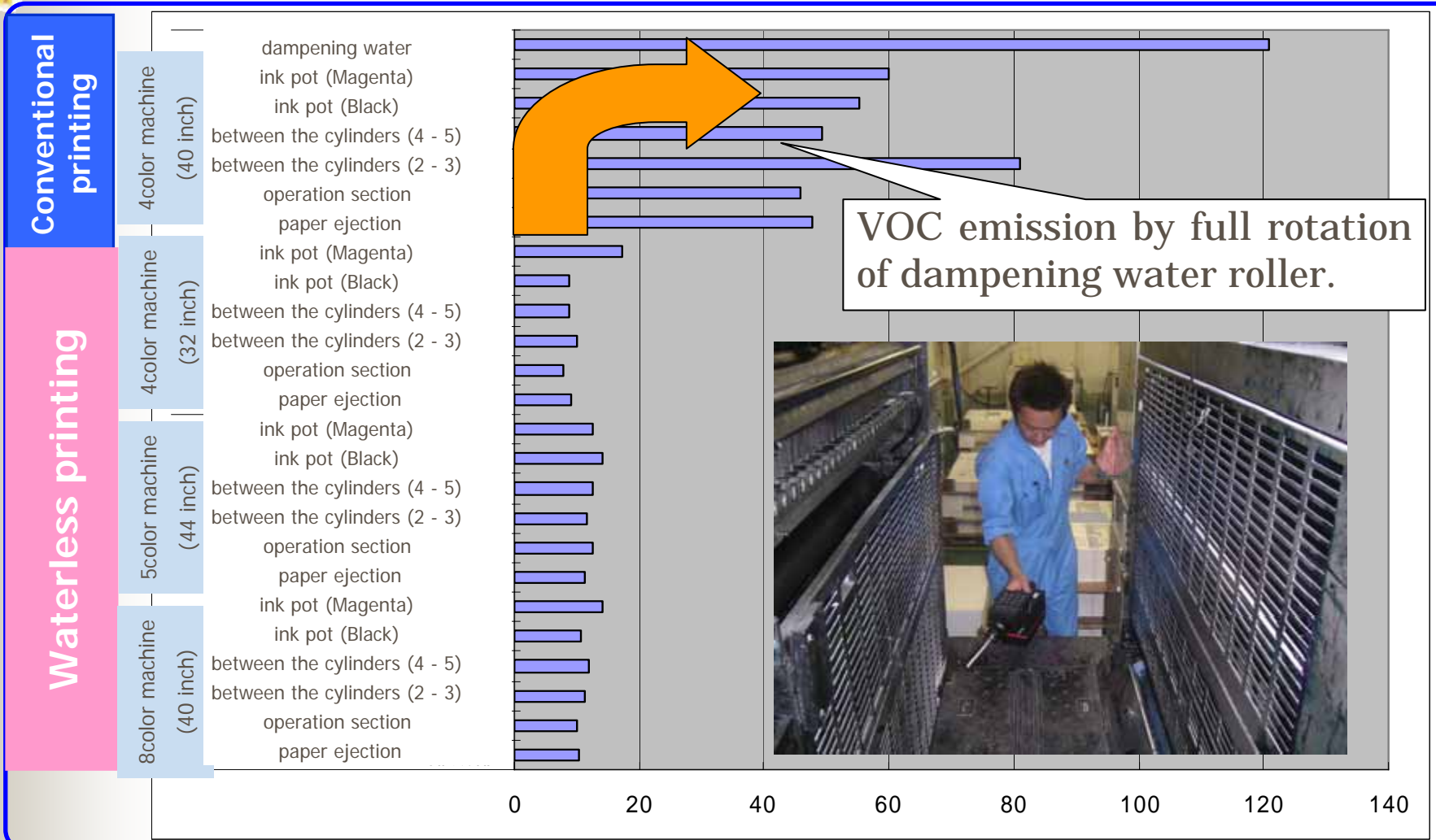
interview by “News plus one”

elevator hall	printing room entrance	middle of the printing room	scrap yard	middle of basement printing room	waste ink yard
0	22.0	10.0	0	12.0	0

75% VOC emission cut at the factory which is only using waterless printing, in comparison to conventional printing



Decreasing VOC emission by waterless at KYUEISHA



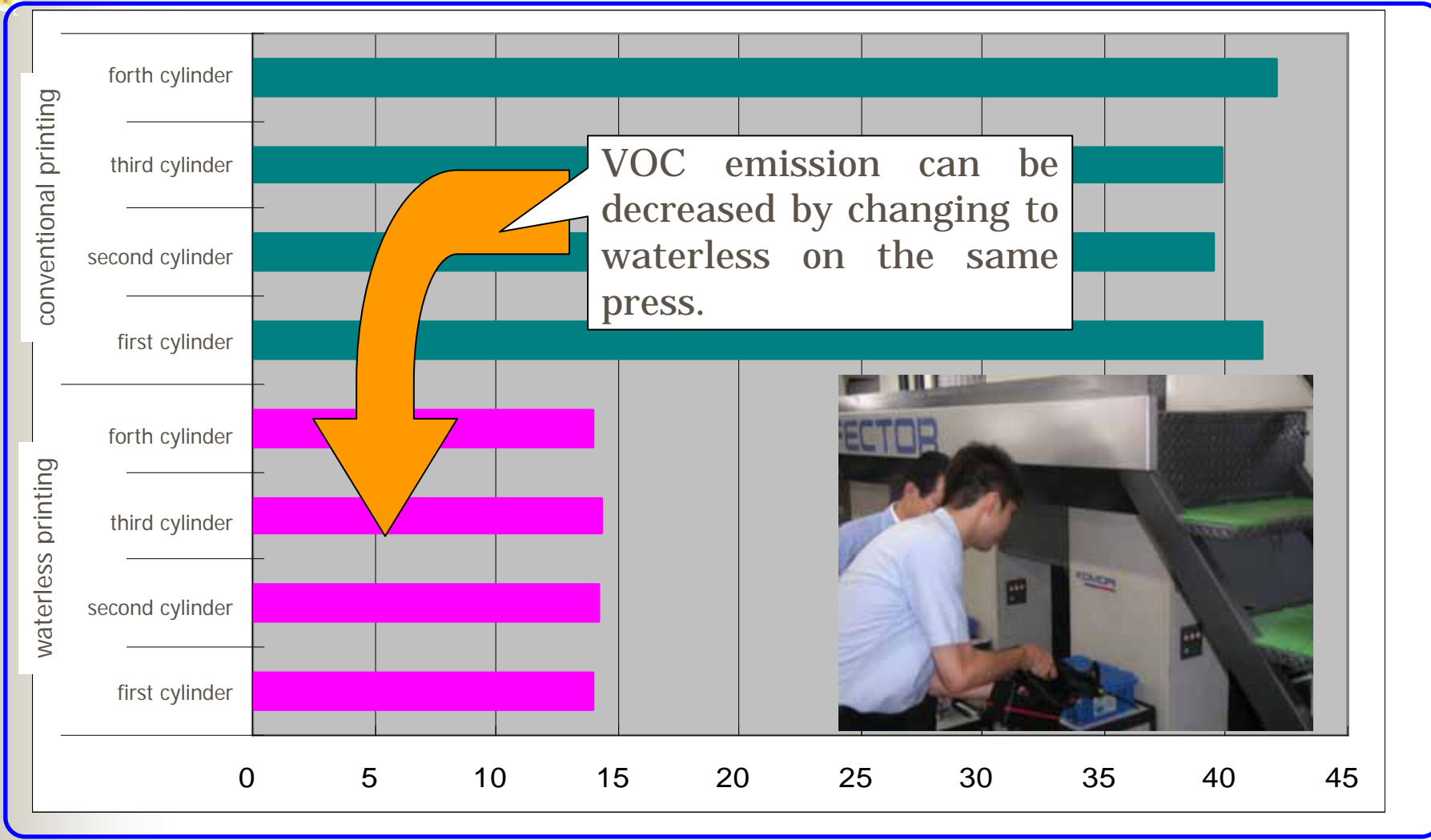
VOC emission by full rotation of dampening water roller.



Success in avoiding VOC emission to the utmost extent by using waterless printing with air condition and ventilation



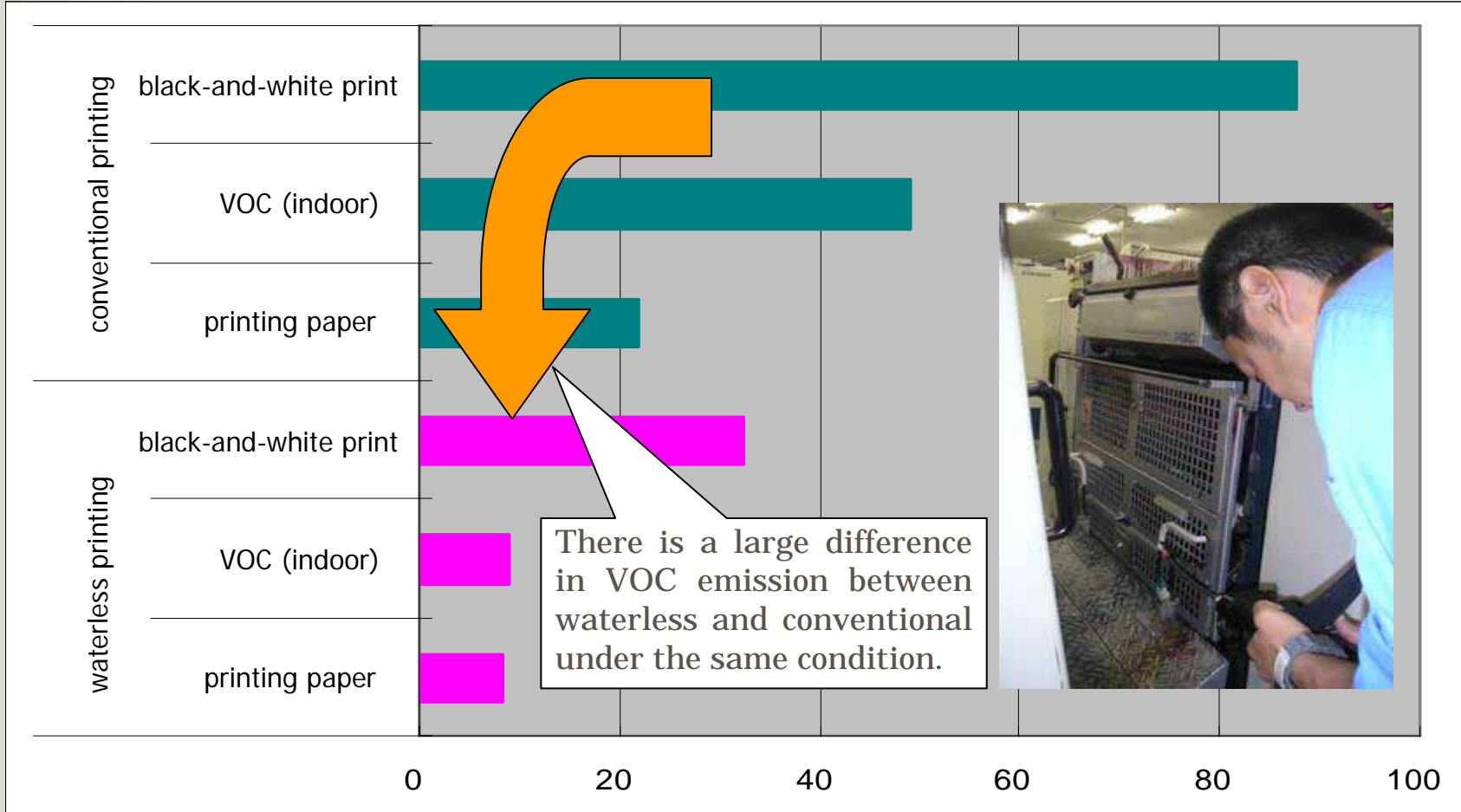
Decreasing VOC emission by waterless at OMURA PRINTING



VOC emission can be decreased drastically by changing the printing method from conventional to waterless on the same press



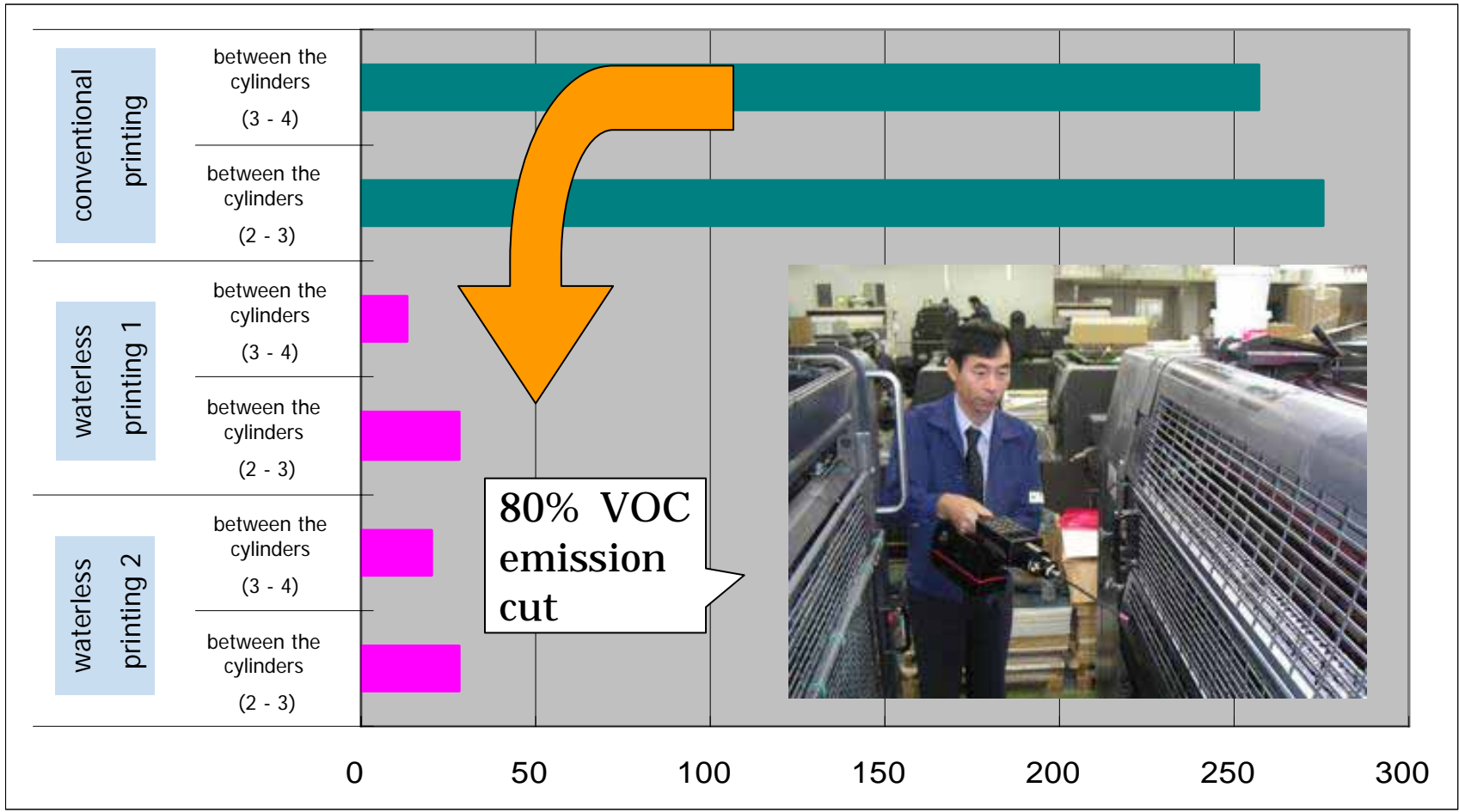
Decreasing VOC emission by waterless at TOSHIBA DOCUMENTS



Challenge for decreasing VOC emission by the whole Toshiba Group.
All press were changed from conventional to waterless,
and there is an excellent effect in decreasing VOC emission.



Decreasing VOC emission by waterless at KAKUBUNDO



Success in changing to waterless printing on old printing press.
Waterless plate will extend the press life.