



ICRE 2017 – Engineering the Future Railway
Where and What Next?



Source of photo: <http://welldonestuff.com/wp-content/uploads/2014/01/21.Wildebeest-42-35621768-1680x1050-5.jpg>



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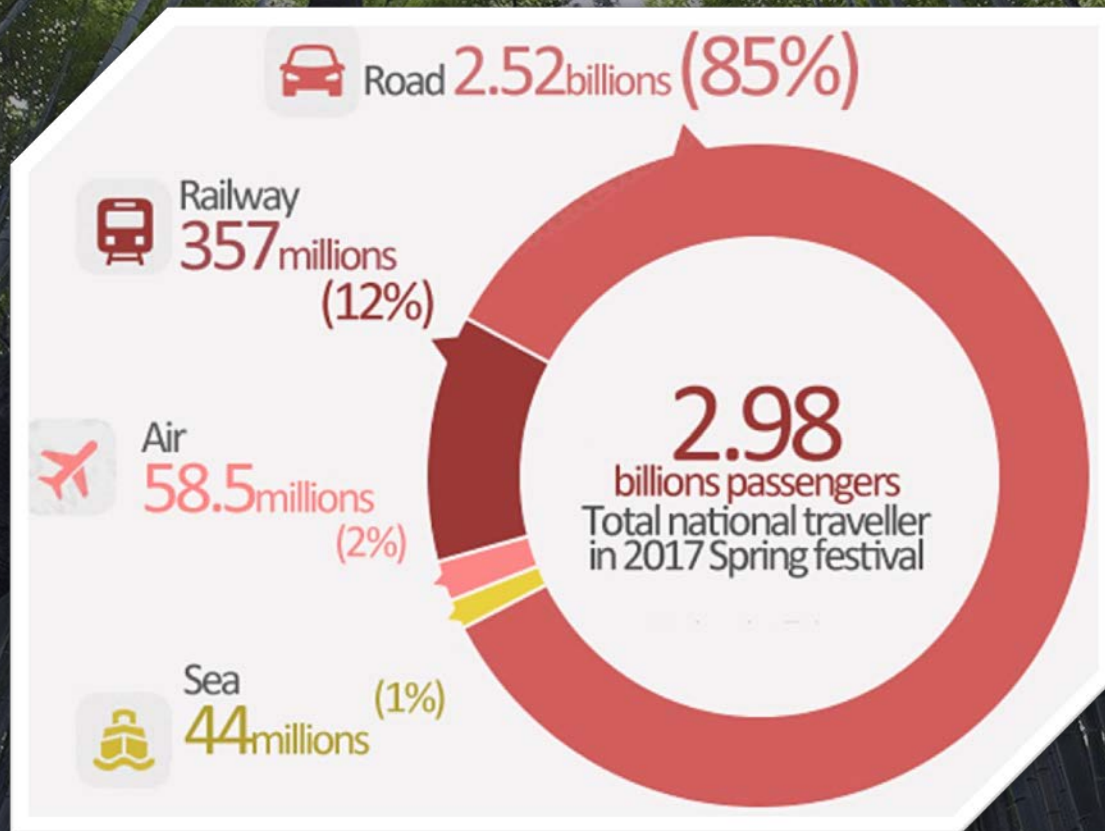
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Source of photo: http://epaper.cnsq.com.cn/jjwb/res/1/10/2016-02/03/10/res01_attpic_brief.jpg

Source of photo: <http://i.epochtimes.com/assets/uploads/2011/01/1101182159582320.jpg>

“Statistics”



@news.cn

www.news.cn



“Cultures and Festivals



Source of photo: <http://www.pravmir.com/wp-content/uploads/2016/12/christmas-shopping-600x337.jpg>



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Source of photo: <http://www.gettyimages.dk/detail/video/crowd-at-temple-fair-for-celebrate-chinese-spring-stock-video-footage/145669611>

“Intercity transport



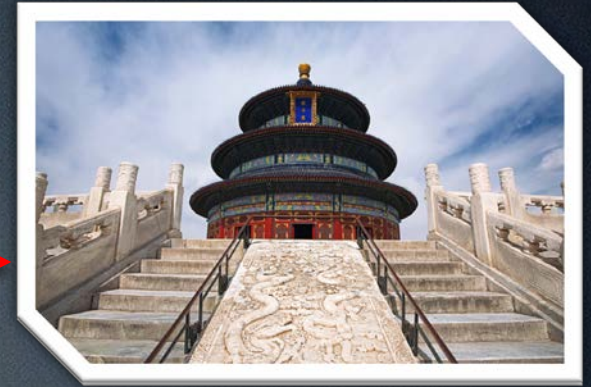
- ✓ Railway network expansion
- ✓ Higher speed
- ✓ Higher capacity

“Intercity transport



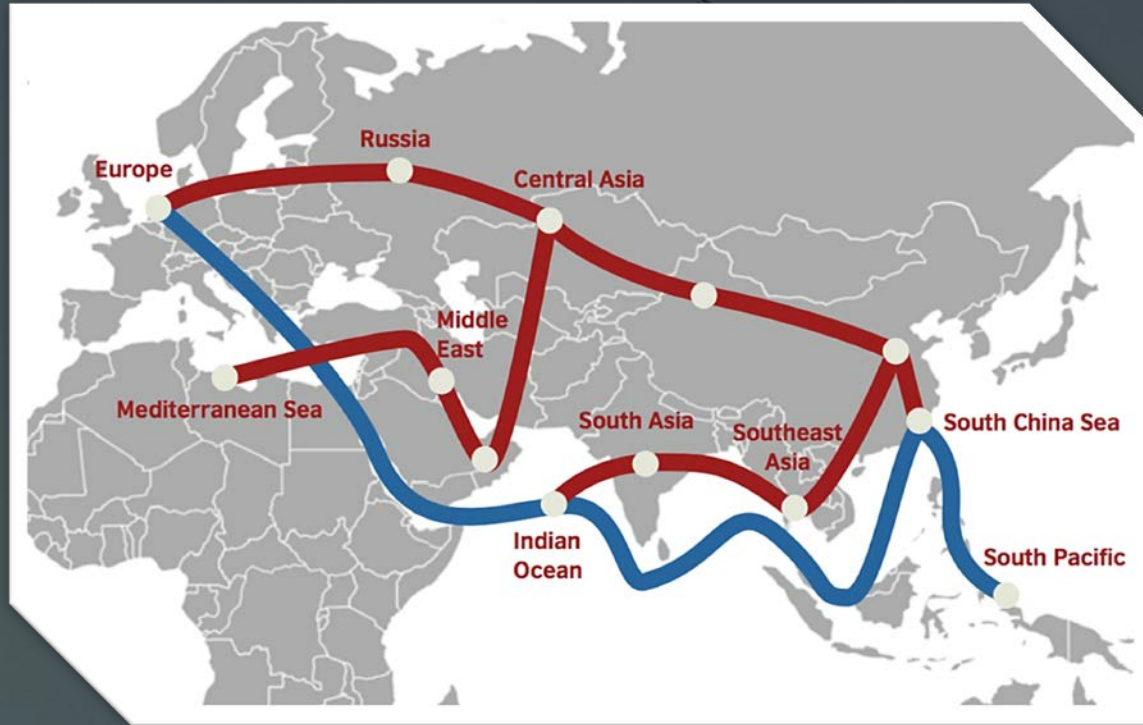
Intercity travel in hours

“Intercity transport



Intercity travel in hours

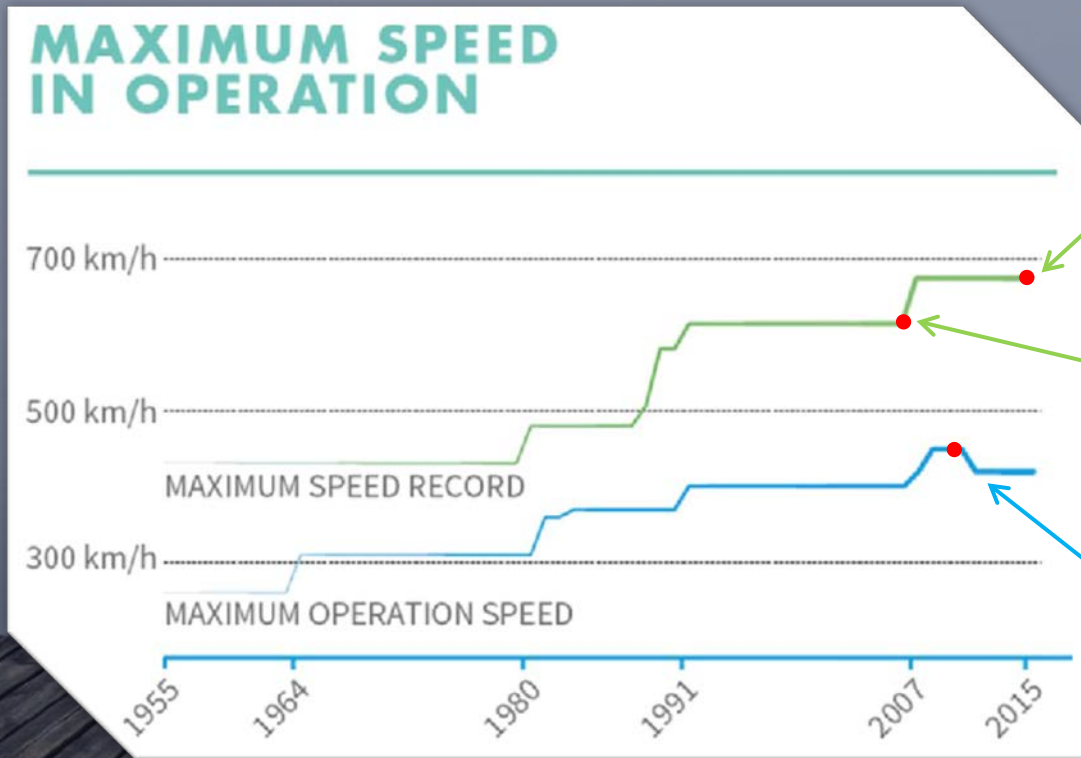
“Belt and Road Initiative



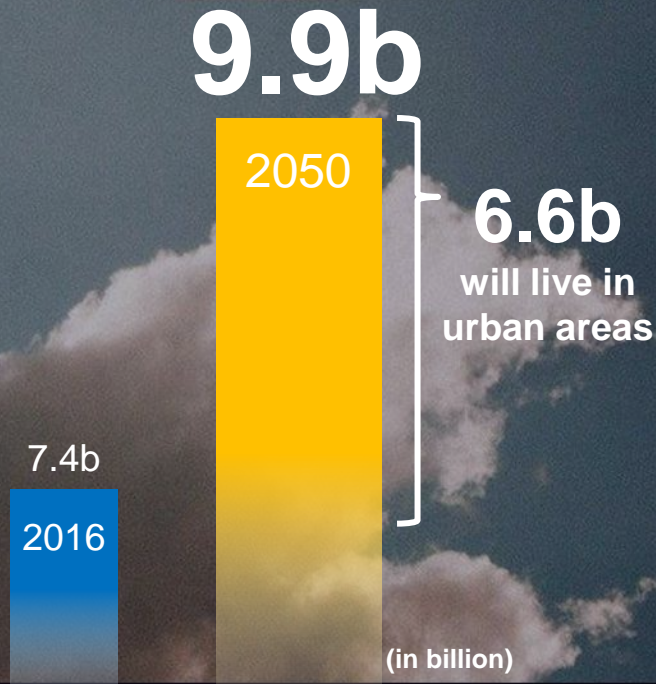
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“Rail speed records”



Population

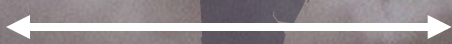


@PRBdata

PRB

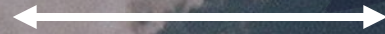
INFORM
EMPOWER
ADVANCE

Challenge



2,000 km
Road length

>730,000 vehicles



x5 m
= ~3,650 km


“Future HK




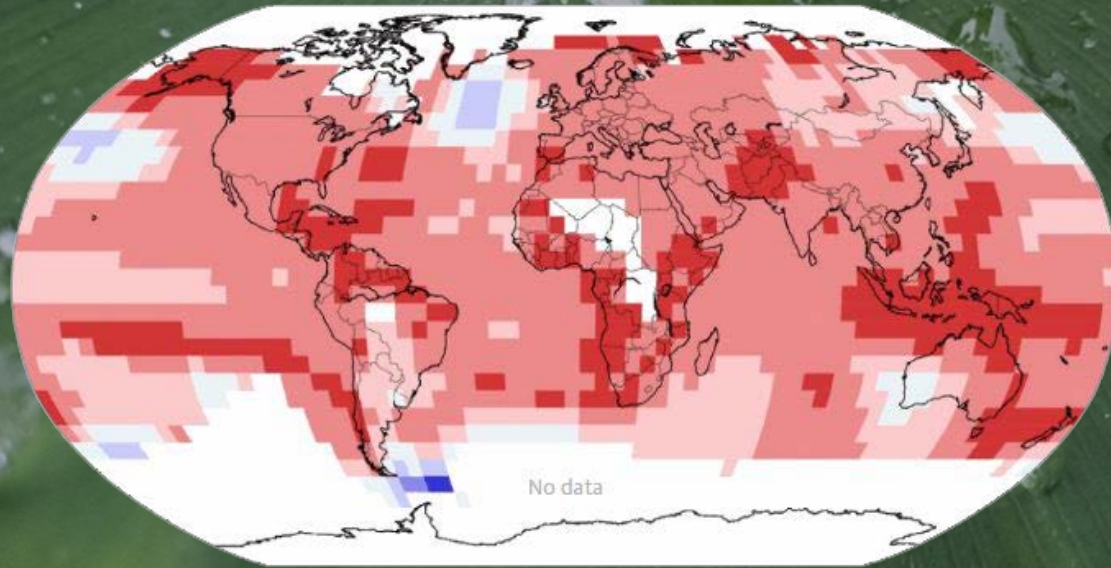
- ✓ 5.5m passengers/day
- ✓ 48% of all public transport passenger trips
- ✓ Railway stations within 500m, for 75% of our population



Sustainability


Record warmest


Record coldest



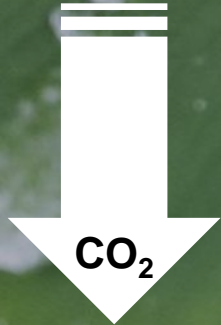
Sustainability

60%
by 2050



**Carbon
Free**

75%
by 2050



Source of data:

1. <http://www.un.org/climatechange/summit/wp-content/uploads/sites/2/2014/07/TRANSPORT-Action-Plan-UIC.pdf>
2. <http://www.cer.be/sites/default/files/publication/Facts%20and%20figures%202014.pdf>

Sustainability



⚠ Safety ⚠



http://i.dailymail.co.uk/i/pix/2016/09/09/09/381D596500000578-3781264-image-a-3_1473410749641.jpg



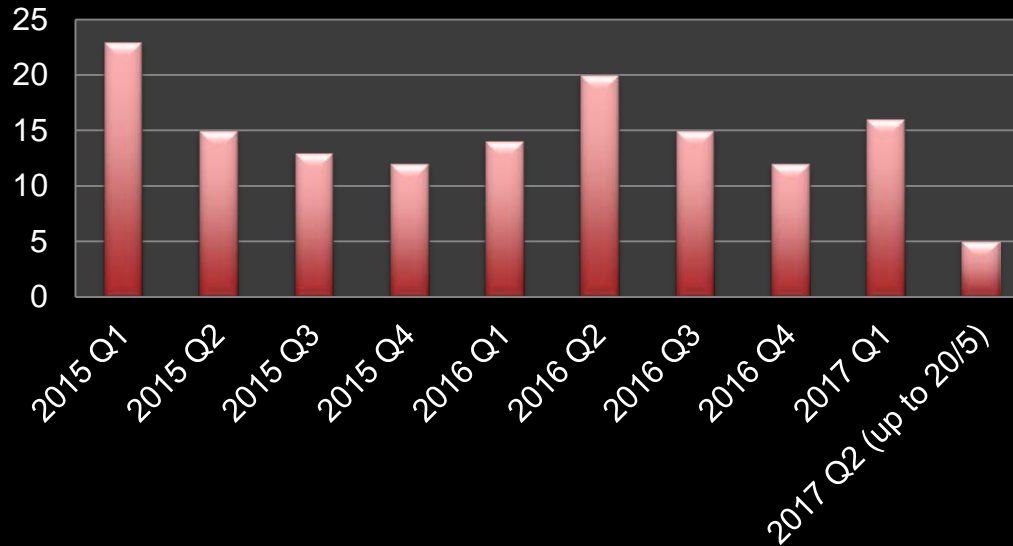
http://assets.nydailynews.com/polopoly_fs/1.2938284.1483762368!/img/httpImage/image.jpg_gen/derivatives/article_750/article-train-2-0106.jpg



http://www.irishtimes.com/polopoly_fs/1.2875546.1479653525!/image/image.jpg_gen/derivatives/bo_x_620_330/image.jpg

! Safety !

Worldwide Railway Accidents



Applying **basic proven technologies** to **avoid railway incidents!**

⚠ Safety ⚠



“Conclusion



Reliable

Safe



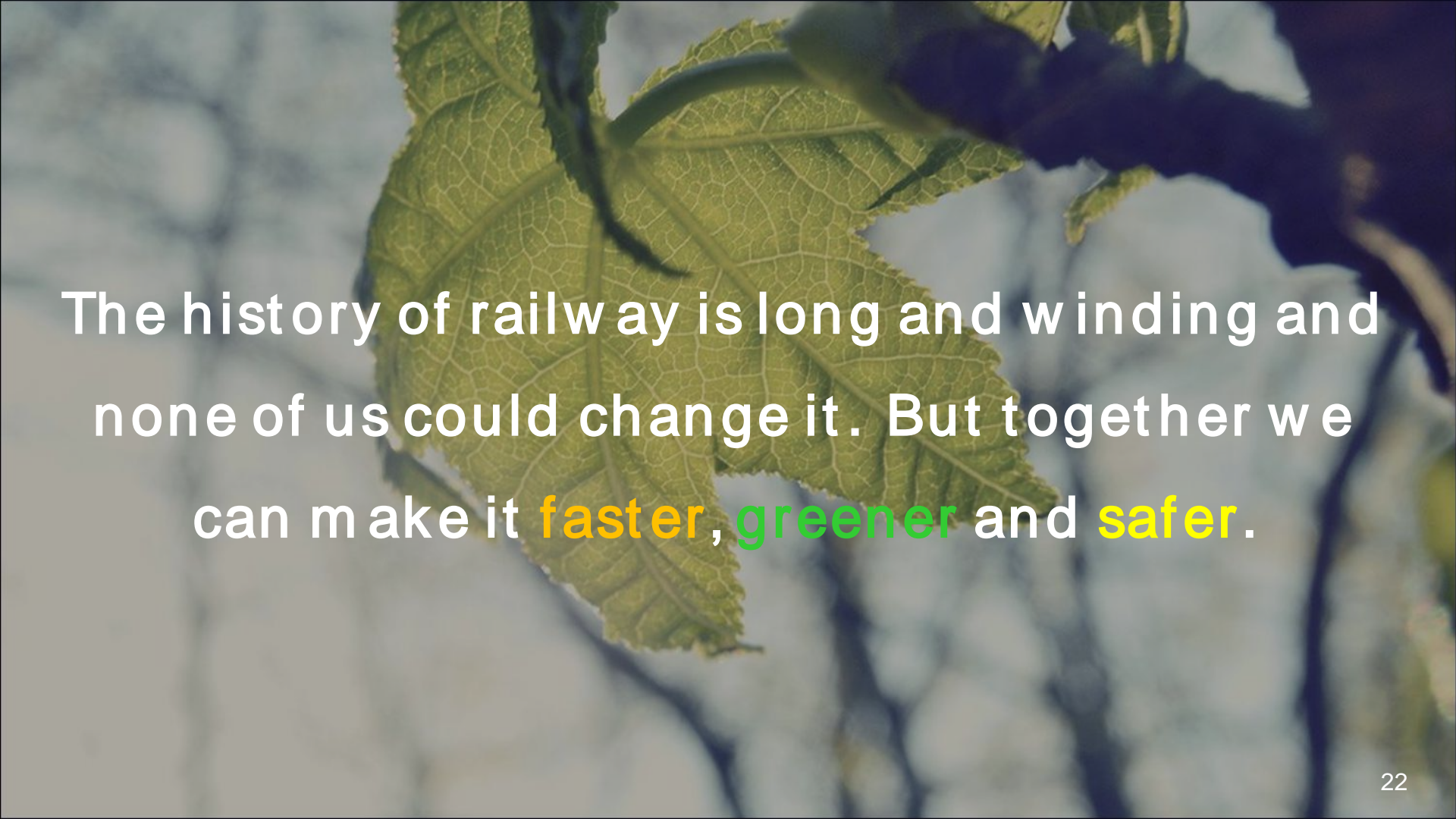
Green



Railway is going **faster and further**



bringing **people and cultures closer**



The history of railway is long and winding and none of us could change it. But together we can make it **faster**, **greener** and **safer**.