#### **Cover Story**

Learn more about the World Hydropower Congress, to be held 14-16 May in Paris, France

#### **5 World News**

Tailings dam collapse in Brazil, funds for hydro expansion in Norway, project development in the Philippines

#### 12 Spotlight

Looking at the implications, and costs, of a cyber attack on critical infrastructure

46 Classified

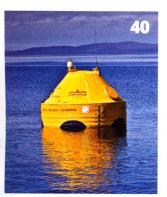
**50** Contacts

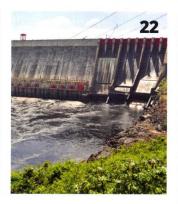
#### features











### **Spotlight**

**10**Paris prepares to host World Hydropower Congress

The biennial summit for hydropower leaders, experts and innovators is coming to Europe in May



# **14** Challenges to development

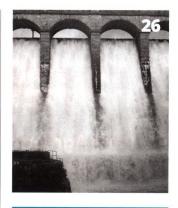
ORNL report focuses on small hydro development in the US, highlighting potential barriers to development

## **16** Small hydro making big

Small hydro developments are hitting the headlines

#### **20** 100 Years of the Turgo Turbine

Gilkes' Turgo Turbine makes its centenary year in 2019. A look at the longevity of the original Turgo design and technology



#### **Civil works**

22 Personal best

Michael Rogers lists his ten most memorable dam projects

# **26**Assuring the whole-life safety of infrastructure

Empowering engineers to raise concerns about safety could help minimise the risk of infrastructure failure

### 28 A civil situation

Projects with major civil works elements are under construction or in development globally

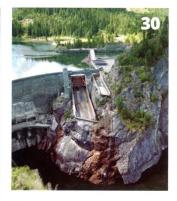
## Maintenance

Northern rehab

Highlighting refurbishment work at projects in the US and Canada

#### **34** Bearing up

Thordon Bearings has provided a new lease of life for hydro plants in Sweden and India



### **36**Just add water

Peter Bigwood at Brokk, Inc explains how hydrodemolition could help simplify concrete repair on dams

## Fish passage

Chinese concerns

Report looks at the impact of dam construction on the fish survival on the Yangtze River

# **39**Making sense of fish passage through dams

Acoustic sensors used in studies of fish travelling through dams

## Wave & tidal power

40

Testing times

Facilitating development of wave and tidal power in Europe

### **42** Moving forward

A number of projects hit important milestones in the path to commercialization

#### **Nextissue**

Encouraging hydro development in Africa; investigating mental health initiatives and issues in the industry; safety at tailings dams; trends in pumped storage