

CLEAN VERBATIM TRANSCRIPT

of the IMPA SAVE webinar held by the International Marine Purchasing Association (IMPA) and the IMPA SAVE Council for Sustainability in the Supply Chain, held online via Hopin on Tues, 07 July 2020

1 Stephen A.: Hello, ladies and gentlemen. I am broadcasting live from the IMPA
2 office, here in the UK. Welcome to the first IMPA SAVE webinar from the
3 SAVE Council for Sustainability in the Supply Chain. I would just like
4 to mention a few points before we start the session.

5 We are scheduled for around 30 minutes or so, as we appreciate how busy
6 you all are. We are posting regular updates about the IMPA SAVE
7 initiative through the website, www.impasave.org, and I would encourage
8 you to register your interest there. This is just the start of us
9 bringing more collaborative working group initiatives around
10 sustainability.

11 As you know, IMPA has experience in this arena through the IMPA ACT
12 programme and so we are now looking to develop a wider programme around
13 environmental care and responsibility. I know that many of you have
14 been busy during this pandemic time, and it has certainly been the same
15 with the IMPA office, and this initiative is our latest and perhaps
16 most ambitious programme so far.

17 For the supply chain, the opportunities to make an impact on the
18 environment are tremendous and - if you like the concept - green sourcing
19 is becoming more and more relevant for our sector: single-use plastic,
20 packaging, waste management, recycling, logistics and delivery
21 procedures are all issues facing us right now. And we believe
22 procurement teams have a special responsibility to influence what
23 happens throughout the supply chain, and suppliers also need to adapt
24 to the changing environment and ensure that these needs can be met.

25 Our purpose with IMPA SAVE is to support the call to action for the UN
26 Sustainable Development Goals and bring knowledge of available solutions
27 to the industry. This is what we will be doing today and Mikael will be
28 introducing this in a few moments.

29 We want to take action now. We want to facilitate responsible
30 procurement, engaging with companies, organisations and people who will
31 support better solutions for life below and above water.

32 Just before I hand over, I would like to introduce you to the IMPA SAVE
33 council; that is Susan Koefoed, the IMPA Chair and CEO and Purchase
34 Manager at Weco Shipping, Dorthe Mejlvang of Maersk Procurement, John
35 Beck of Wilhelmsen Ship Management, Marinos Kokkinis of Oceanic Catering
36 and Allan Muir of Teekay Shipping who unfortunately cannot join us today
37 because of a project he had to take care of.

38 There is also an opportunity to ask questions on the chat if anyone
39 wants to do this. Without further ado, I would like to hand over to
40 Mikael Karlsson who is the Chair of IMPA SAVE and IMPA Special Ambassador
41 for Sustainability, and he is known to many of you.

42 Mikael K.: Thank you, Stephen. I hope everyone can hear me well.

43 First of all, I am humbled and proud to see today's support for our
44 IMPA initiative. Our planet needs us all, and today marks the first of
45 many initiatives that all of you can support in the workspace and
46 incentivise those around you to do the same. This is our call to action
47 to reduce plastic water drinking bottles on our ships; I am aware that
48 many companies have already taken steps to reduce use of plastic water

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49 bottles onboard, but please pledge and be part of this great initiative.
50 To drive the industry in the same direction, we need your pledge to
51 change.

52 I also want to tell you why I got involved in this, as there have been
53 a few questions even from my family and kids. I decided to get involved
54 when I watched a BBC documentary from the Lord Howe Island, a remote
55 island located in the Tasman Sea, 600 miles away from Australia. There,
56 I watched a team catching hundreds of birds and chicks and physically
57 flush them with water through their stomachs to give them a chance to
58 survive. What came up was plastic - and a lot of it - bits and pieces,
59 and even whole bottle caps. And what made matters worse is that the
60 mother and daddy seabirds were feeding the chicks plastic because they
61 confused it with food. And that, for me, was enough to react. I was
62 almost devastated when I saw it and it still really hurts when I see
63 it. I will send out the link to this.

64 Our IMPA SAVE team have gathered that an average vessel with 22 people
65 onboard consumes, with each individual consuming 2.2 litres of drinking
66 water per day, 18 tons of water per year. Now I am in the supply
67 industry, which means we are delivering an average of 18,000 one-litre
68 bottles. On average, one thousand litres of water will fit on a pallet,
69 which equals 18 pallets that leave 1,500 boxes of cardboard and plastic
70 as additional waste.

71 Now picture a bridge, 50 cm wide, built by water plastic bottles from
72 the earth to the moon. Now picture that 20 times and the bridge is 10
73 metres wide - the same as three lanes on the motorway - this is plastic
74 just for water bottles our industry has used since the millennia. This
75 equals 20 billion one-litre plastic bottles or 800 tons of plastic
76 waste, most of which is not probably recycled and of which we all share
77 responsibility.

78 We have the solution at hand and we are now beginning a journey of
79 making the means to an end fit. Many vessels can today produce water
80 and adding new technologies as filtration systems to this, so that the
81 water is clean to drink. And this is what we will be talking about
82 today.

83 I urge each one of you to pledge and act on today's issue, our call to
84 action and influence our own companies and industry players that are
85 missing today's call. Please engage online, ask questions, be curious,
86 act and care, and really, do it because you can - that is my pledge to
87 you all.

88 Thank you.

89 Stephen A.: Thanks, Mikael.

90 Those are emotive pictures that you paint for us there and I am sure
91 they resonate with a great number of listeners and viewers today. I
92 know there are many people who want to get involved to make a difference.

93 I am really delighted this morning to introduce two companies that are
94 doing something about this and have these solutions, and the purpose of
95 this webinar is to find out more about them. I would like to introduce
96 Mark Knoester from Hatlenboer-Water BV and Mark Hadfield of Flow Water
97 Technologies Ltd.

98 We have got a series of questions that we would like to put to you and
99 there might be a few others that come from the chat as well.

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100 **Can we kick off with a brief explanation of your solutions or your**
101 **products? Could you tell us what they are, what they look like and how**
102 **they work?**

103 Mark K.: To make a transition from bottled water to drinking water on the ship,
104 we have set up a complete concept with several products accommodating
105 it. One part of the solution is hardware and one part is the software.
106 The hardware is in various components, like the filling station, the
107 stainless steel water bottles, filtering steps, etc. The software
108 consists of procedures such as product analyses, onsite marketing and
109 risk assessments, e.g. safety plans onboard which result in onboard
110 policy to keep the drinking water of sufficient quality.

111 All our products are focused on safe water onboard, but the key is to
112 reduce plastic bottles. And even if the water is safe to drink and
113 compliant with the applicable regulations of the flag state of the ship,
114 it is not always granted the crew will directly accept that the water
115 is safe to drink. This is why we need a mixture of hardware and software,
116 including marketing. We see success when there is an ambassador onboard
117 the ship who promotes the water as being safe to drink.

118 Our bottle-filling stations, the hardware side, are designed to
119 withstand maritime conditions, have a totally contact-free filling mode
120 (which is especially important now in the COVID-19 period) and are
121 equipped with a filter status indicator to ensure that the crew sees
122 that the water is filtered. The filter can block 99.9 per cent of the
123 bacteria. Another good part of the machine is a green ticker, this
124 counts bottles and presents a number on the machines, telling you how
125 much you reduced. What we are seeing at present is a competition starting
126 between vessels on who saved the most plastic bottles.

127 How do we make sure the water dispersed by the water filling station is
128 safe? One option is to find safe water from production to consumption,
129 i.e. the complete process, while the other option is a filtration unit
130 next to the bottle filling station. What is the best approach? That
131 really depends on the quality of ship sanitation onboard. However, it
132 is worth bearing in mind that water is already safe (or close to safe)
133 to drink onboard most vessels. We see numerous instances where we can
134 provide safe water onboard with some very simple equipment and some
135 minor adjustments. We always look to find the most economical way to
136 make plastic bottles a thing of the past.

137 Mark H.: We took the approach to not repeat some of the things that the other
138 Mark has mentioned. The crew wants to know that they are getting good-
139 quality water. Irrespective of the filtration methods that we had to
140 use, one of the important things was to get the taste and acceptance
141 ready for the crew. We trialled several units that we worked with and
142 came up with an ultra-filtration process that allowed us to provide the
143 safe drinking water, but that was also something that the crew could
144 actually operate correctly, e.g. easy-to-change filters, the
145 practicality that there will be no breakdowns, no power supply on the
146 drinking water side, etc.

147 And we took the solution even a stage further because sanitisation is
148 very important when it comes to drinking water; in other words, you
149 cannot just pop to the corner shop and get some disinfectant. So we
150 added a disinfection production system to our drinking water solution;
151 we now have an ultra-filtration which kills 99.9 per cent of the bacteria
152 and a disinfection system that has all the European standards (ECHA
153 registered, EN certificates, etc.) that produces a solution that kills
154 99.999 per cent of the bacteria, so we are able to clean when changing
155 filters. They also have sanitisation there and it provides a cleaning

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156 and disinfection solution for use in the galley and cabins and just
157 everywhere else as well.

158 Stephen A.: **What do these things look like physically and where do they sit on the**
159 **ship?**

160 Mark H.: Our units are about a meter wide, about 40 cm high and sticking out by
161 about 25 cm. They are not big units and we have the ability - for a
162 cost - to separate the drinking water from the disinfection unit, as
163 there is no need to have a disinfection unit with the water unit on
164 every station. This makes it an even smaller unit.

165 Marinos K.: **Do these solutions need to be classified or registered?**

166 Mark H.: My particular opinion, while we are in the process of getting type
167 approval for our ballast water system, is that there should be more
168 stringent regulations when it comes to drinking water systems. We are
169 already in contact with class and we are speaking to them - a bit of an
170 advisory on both ways - on which way to go. There isn't a call for class
171 certifications, but I do think it will give confidence to shipowners
172 and crew. While my colleague Mark here is an ally in stopping plastics
173 going to sea, there will inevitably be companies that will offer
174 inferior products that could cause ill health to a crew member, and we
175 need to safeguard ourselves in the industry.

176 Mark K.: Indeed, no classification or registration is required now, as Mark has
177 already said. But we must not forget that the quality of drinking water
178 onboard is managed by a ship's sanitation regulation, the flag state's;
179 this is how it is implemented now. So you have all following the ship
180 sanitation regulation and then you work on the safety of water onboard.

181 Is it not a classification or registration, but you must follow the
182 ship sanitation regulations. There are some countries that do not even
183 have the ship regulations implemented in their own country, so they say
184 you have to follow WHO advice on how to keep water onboard, and that is
185 quite complicated. In my opinion, all countries that are involved in
186 ship sanitation regulations, have to implement their own regulations in
187 their countries/flag states.

188 Stephen A.: **The hardware, as you described it, does it need a pre-existing solution**
189 **onboard in order for your solution to be incorporated? If yes, do you**
190 **offer both?**

191 Mark K.: This completely depends on the water quality onboard. If there is a
192 good working system, e.g. desalination unit with a good treatment and
193 a filtration set, disinfection sets in the engine room, etc., it can be
194 perfectly healthy to drink from the tap point without any modifications.
195 We have several solutions for this; our organisation offers both, but
196 it all starts in the engine room at the desalination unit.

197 Dorthe M.: **Does this hardware need regular maintenance work? How about testing?**

198 Mark H.: Every ship is completely different. This is a brand new subject to a
199 lot of vessels and the maintenance of the vessels and the hygiene
200 onboard the vessel is going to be different in every circumstance. We
201 started with the worst case scenario and advise that filters should be
202 changed more frequently than necessary, as each vessel starts to
203 understand this new subject, i.e. filtration against bottle water.

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204 In our advice, they will soon understand that maybe filters don't need
205 to be changed as often and there are signs in the instructions and
206 things to look out for, like slime in the pre-filters and signs of
207 possible legionella. The vessel should also carry onboard a legionella
208 test kit. There are signs and suggestions that every six months, filters
209 should be changed, but there is a bit of looseness around the ruling.
210 Is it actually six months legally to change filters or 12 months? There
211 isn't actually a defined answer. So our answer to this is that at the
212 six-month mark, it should be changed, but if the law states 12 months,
213 there is no legionella, filters are flowing and everything is clean,
214 the service life can be extended. Again, every ship is different and
215 every one is going to find a different way forward. We give the relevant
216 instructions. We do not just want to change the filters because it is
217 profit for the manufacturer. In this pandemic, we need to think about
218 everything.

219 Mark K.: Testing is a good topic. We need to test more often than six-months
220 onsite. Every commercial ship is required to have a water safety plan
221 under MLC 2006. There is also onboard testing equipment for onsite
222 testing that gives you quick and reliable impressions of the health of
223 the drinking water system. This is so you can act fast before the
224 quality of the water drops to below drinking water standards. Try to
225 work according to your water safety plan and that is identical for a
226 ship if the ship sanitation is maintained. There is not much else to
227 test, maybe disinfection like PH and chlorine. But it is all in your
228 water safety plan.

229 Dorthé M.: **There are certain areas of the world where the ocean water is deemed**
230 **undrinkable. When I talk to Maersk crew, this seems to be a big problem,**
231 **not mentally. What is your take on this?**

232 Mark H.: The water around the world obviously changes and no place is the same.
233 The equipment; this is part of the education for the crew. If you have
234 an evaporator, the water that has been evaporated is very clean pure
235 water. The sanitisation or the bit where it is unpalatable is down to
236 vessel and how the water is stored. That is why we have added a
237 mineralisation filter and to obviously give some flavour and taste back.
238 But filtering in a way that if you have evaporated water which is too
239 pure is not good to drink, so the mineralisation filter will have the
240 correct level of minerals.

241 If you bunkered the water, the water that came on the bunker should
242 come with a certificate that it was potable water in the first place.
243 But if a vessel has got a system that is allowing seawater to ingress
244 into the drinking water, you have got a problem, it is a fault and it
245 should not be allowed. It is not the drinking water system or the
246 solution, it is proof that there is a problem and that it should be
247 addressed.

248 Stephen A.: **I think it is important to discuss about these issues and it seems to**
249 **be a relatively simple process to manage onboard for the crew.**

250 Mark H.: We keep it simple for anybody to operate and we have done it as simply
251 as we possibly could. We have done large numbers of trials and we even
252 put units on vessels without instructions, deliberately created a fault
253 and waited to see if the crew could rectify the problem; and they
254 managed. The complicated issue here is beforehand, with the evaporator
255 or the RO systems that some vessels have; if these systems are not
256 capable of dealing with seawater to a standard, then they have to look
257 at an operator, an improved RO system or bunkering the water in the
258 first place.

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259 Mark K.: You also have the perception of crew to think about. You also need a
260 marketing tool onboard, so that there are a few people, e.g. the
261 engineer, captain, etc., who can promote that the water is safe to
262 drink. But of some importance is that there is a perception from the
263 crew that the water is not safe to drink. We have some analyses we can
264 do onboard and we can certify it is safe to drink. You can display this
265 certificate on the wall next to the filling station and you can also
266 put this on the bottles. You have to do all these to comfort them.

267 John B.: **How do we help to communicate these things to the crew and overcome**
268 **challenges and fears that they might have? Advice?**

269 Mark K.: We are working with QR codes on the bottles themselves, which take you
270 to the website that helps convince them the water is safe onboard. We
271 also have promoting tools, such as a green tick on the filling stations
272 and a led light that shows the water is filtered. It is not granted,
273 unfortunately, that everyone will be fine with that. Filipinos, for
274 instance, do not drink tap water at home, so why would they do so
275 onboard? It is a change in mentality, as is for many of us.

276 Marinos K.: I believe that the shipowner, ship manager or caterer is responsible to
277 create a campaign in order to create a culture change. This burden does
278 not fall on the vendor, but on the manager/owner/caterer. They should
279 be the ones providing these services, as it will help if awareness is
280 created through flyers and materials describing the system and
281 procedure. Testing also gives the crew comfort and will help greatly.

282 Mark H.: With the current pandemic, we have also got on our hands something that
283 every shipowner and ship management company should be embracing right
284 now. You have finally got your audience's attention. All the seafarers
285 out there who were not able to be exchanged on crews are nervous about
286 products being brought on to the vessels, not knowing whether there is
287 COVID on things. You have now got an audience that is there and ready
288 to embrace change.

289 One of the things we have found in one of our recent trials is that the
290 drinking water is there for the crew to make a decision, but we also
291 have the disinfection system on there, and every crew member is getting
292 their own dispensing bottle. The crew members are willing to take this
293 onboard and the drinking water seems to come on naturally. That is it.
294 The crew are with you. We should focus now while we have the world's
295 attention. The whole momentum should now be from the shipowner to the
296 ship manager; the more people are talking about it, the easier the move
297 will be.

298 Boris B.: **Can we talk ROI or return on investment, both from a sustainability**
299 **viewpoint and a practical one?**

300 Mark K.: It really depends on the extent of our solution. Generally, with a
301 simple set up, the ROI is less than two years. When more complex systems
302 are required, we would have to calculate it on a case-by-case basis.

303 Mark H.: We have had some calculations done by some major companies and we did
304 not want to just capture the drinking water, but also the disinfectant
305 side as well. If you take into account the extra chemical bottles that
306 you will remove by taking one of our systems, the ROI is actually months
307 rather than years.

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308 Stephen A.: In summary, there are practical solutions that can be put onboard, which
309 offer sensible times for ROI, are manageable, relatively easy to
310 maintain and are healthy, effective and sustainable. Mikael?

311 Mikael K.: Yes. There is commercial ROI and, more importantly, a sustainability
312 ROI. From a procurement perspective, we are right on target, so for me
313 it is a matter of getting started which also leads to another question.

314 **Is there a testing period/limit on these solutions? What is the**
315 **suggested number for initial trial?**

316 Mark K.: The recommendation is to start on two vessels, and after a certain
317 period, one can make some adjustments and, from then onwards, you can
318 roll it out to all other ships.

319 Mark H.: We have done trials and they have been successful. We are happy to talk
320 to all. Guys, we have one planet and two solutions here. Talk to us!

321 Stephen A.: This is happening. You have got solutions on ships being tested right
322 now and I have spoken to some of your customers who are very happy with
323 how things are moving.

324 Paolo M.: **Referencing the installation/weak link is the distribution system from**
325 **the filtering unit to the filling station, the cleanliness, etc. What**
326 **is your opinion on the installation of additional refrigerated water**
327 **fountains after the filtering units?**

328 Mark H.: It can be done and we can have fountains if need be. This is no problem.

329 Mark K.: Our installation is already a filter inside the bottle filling station,
330 but we can have additional stations you can place that are approved.
331 But you have to find the source of why the water is not safe to drink,
332 e.g. corrosion, to address the problem in the engine room.

333 Stephen A.: We need to draw to a close now. Anything to add, Mikael?

334 Mikael K.: On the www.impasave.org website, there is a pledge button and I urge
335 everyone who has the opportunity, possibility and will, to pledge for
336 this so we can drive this movement in the right direction. We already
337 have pledges prior to this, which I am immensely thankful for, but we
338 all need to step in this space and make a change. And we must not look
339 at each other in doing so, but take action ourselves and get it done.
340 And if you need help within your organisation, for instance how to get
341 to the point, how to talk to technical operations or environmental
342 managers and why this is important, reach out to us. We have the IMPA
343 Blog available at www.impablog.com where you can reach out for questions
344 that will not be left unanswered. You can reach out to me, the team,
345 Mark Knoester or Mark Hadfield for questions, but please get on board
346 with this programme. We have more coming and this is just a start.

347 Stephen A.: This is indeed just the beginning of the initiative. People are asking
348 about where they can find contact details. Can I just direct everyone
349 to the www.impasave.org website for contacts? Thank you to Mark
350 Knoester, Mark Hadfield, Mikael and the IMPA SAVE council and everyone
351 joining today. More webinars are coming in the following months, perhaps
352 one after the summer, and we hope we can get together face-to-face soon.
353 I want to say thank you once more and wish you a safe and happy day.